



Db 1 SPKMVQSGCGFRKMDRISSSSGLGCKVLRH 32

RESULT 2

AAAR34301

ID AAR34301 standard; protein; 32 AA.

AC AAR34301;

DT 28-JUL-1993 (first entry)

DE Mutated hBNP.

KW Wild type; brain natriuretic peptide; BNP; modify; Asp-Pro.

OS Homo sapiens.

PN JP05056794-A.

PD 09-MAR-1993.

PF 03-SEP-1991; 91JP-00222783.

PR 03-SEP-1991; 91JP-00222783.

PA (DAIT-) DAIICHI KAGAKU YAKUHIN KK.  
(DAUC ) DAIICHI PHARM CO LTD.

DR WPI; 1993-120386/15.

PT Physiologically active peptide pregn. e.g. human brain natriuretic peptide - by culturing transformed cells having gene which encodes fused protein of active and protective peptide(s), collecting and cleaving protein.

PS Disclosure; Page 6; 16pp; Japanese.

CC The sequences given in AAR34301-02 are mutated brain natriuretic peptides (BNP). These peptides have been modified such that the Asp in the N-terminal Asp-Pro linkage may be replaced by Ser or may be deleted

SQ Sequence 32 AA;

Query Match 100.0%; Score 169; DB 2; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMVQSGCGFRKMDRISSSSGLGCKVLRH 32

Db 1 SPKMVQSGCGFRKMDRISSSSGLGCKVLRH 32

RESULT 3

AAAR36381

ID AAR36381 standard; protein; 32 AA.

AC AAR36381;

DT 29-JUL-1993 (first entry)

DE Recombinant hBNP.

KW Plasmid; fusion peptide; murine; rat; interleukin 1; IL-1; human; brain natriuretic peptide; hBNP; recombinant; BNP.

OS Synthetic.

FT Key Location/Qualifiers

FT Misc-difference 1 /note= "May be absent"

PN JP05068581-A.

PD 23-MAR-1993.

PF 10-SEP-1991; 91JP-00230597.

PR 10-SEP-1991; 91JP-00230597.

PA (DAIT-) DAIICHI KAGAKU YAKUHIN KK.  
(DAUC ) DAIICHI PHARM CO LTD.

DR WPI; 1993-130645/16.

PT Prepn. of physiologically active peptide without aspartic acid-proline sequence - comprises gene recombination with cell transformation by specified expression vector.

PS Claim 3; Page 6; 17pp; Japanese.

CC This sequence represent a recombinant human brain natriuretic peptide (hBNP). This protein was encoded by the fragments of plasmids given in Q410-04 which encode fusion peptides of murine or rat interleukin 1 (IL-1) fused to hBNP. Fusion genes of this kind can be used to express recombinant BNP which lacks the Asp-Pro N-terminal bond. The Asp residue may be replaced by Ser or may be absent

SQ Sequence 32 AA;

Query Match 100.0%; Score 169; DB 2; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMVQSGCGFRKMDRISSSSGLGCKVLRH 32

Db 1 SPKMVQSGCGFRKMDRISSSSGLGCKVLRH 32

RESULT 4

AAAW70090

ID AAW70090 standard; peptide; 32 AA.

AC AAW70090;

DT 28-OCT-1998 (first entry)

DE Brain natriuretic peptide (BNP) 1.

KW BNP; brain natriuretic peptide; cardiac disease; cardiac hypertrophy; chronic heart failure; ischaemic cardiac disease; arrhythmia; CGMP; pulmonary blood circulation; haemodynamic property.

OS Unidentified.

PN WO9834636-A1.

PD 13-AUG-1998.

PF 05-FEB-1998; 98WO-JP000483.

PR 05-FEB-1997; 97JP-00022594.

PA (SUNR ) SUNTORY LTD.

PI Inomata N, Yamaki A, Furuya M, Hidaka T;

DR WPI; 1998-446949/38.

PT Drug composition comprises natriuretic peptide(s) - for safe treatment of cardiac hypertrophy associated diseases and chronic heart failure.

PS Example; Page 23; 35pp; Japanese.

CC This represents a brain natriuretic peptide (BNP) sequence. The invention provides a composition for treating cardiac diseases associated with cardiac hypertrophy. The composition comprises an active ingredient

CC capable of binding to the peptide receptor of GC-A and promoting  
CC production of cGMP. The drug composition may be used clinically to treat  
CC cardiac diseases caused by cardiac hypertrophy, including chronic heart  
CC failure, ischaemic cardiac diseases and arrhythmia. The active substance  
CC can bind to the natriuretic peptide receptor of GC-A and promote  
CC production of cGMP, effectively preventing cardiac hypertrophy and  
CC leading to improvement of the pulmonary blood circulation. The substance  
CC does not affect haemodynamic properties, blood pressure, heart beat and  
CC urine volume  
XX  
SQ Sequence 32 AA;  
  
Query Match 100.0%; Score 169; DB 2; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
QY 1 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 32  
1 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 32  
Db  
  
RESULT 5  
AAM67040 ID AAM67040 standard; peptide; 32 AA.  
XX  
AC AAM67040;  
XX  
DT 15-DEC-1998 (first entry)  
XX  
DE Brain natriuretic peptide (BNP).  
XX  
KW atrial natriuretic peptide; brain natriuretic peptide; ANP; BNP;  
KW lipophilic substituent; hypertension; congestive heart failure; oedema;  
KW renal disorder.  
XX  
OS Mammalia.  
XX  
FH Key Location/Qualifiers  
FT Region 2..32 /note= "this fragment having a lipophilic group attached  
FT to it is claimed in Claim 33"  
FT 3..32 /note= "this fragment having a lipophilic group attached  
FT to it is claimed in Claim 33"  
FT Region 4..32 /note= "this fragment having a lipophilic group attached  
FT to it is claimed in Claim 33"  
FT 5..32 /note= "this fragment having a lipophilic group attached  
FT to it is claimed in Claim 33"  
FT Region 6..32 /note= "this fragment having a lipophilic group attached  
FT to it is claimed in Claim 33"  
FT 7..32 /note= "this fragment having a lipophilic group attached  
FT to it is claimed in Claim 33"  
FT Region 8..32 /note= "this fragment having a lipophilic group attached  
FT to it is claimed in Claim 33"  
FT 9..32 /note= "this fragment having a lipophilic group attached  
FT to it is claimed in Claim 33"  
FT Region 10..26 /note= "this fragment having a lipophilic group attached  
FT to it is claimed in Claim 33"  
FT Disulfide-bond /label= disulphide\_bond  
FT  
XX  
PN WO9845329-A1.  
XX  
PD 15-OCT-1998.  
XX  
PF 06-APR-1998; 98WO-DK000142.  
XX  
PR 04-APR-1997; 97US-0043400P.  
XX

PA (NOVO ) NOVO-NORDISK AS.  
XX  
PI Huusfeldt PO, Madsen K, Knudsen LB;  
XX  
DR WPI; 1998-557474/47.  
XX  
PT Lipophilic derivatives of atrial and brain natriuretic peptides - notably  
PT as amides, prolong activity, use in hypertension, congestive heart  
PT failure, renal disorders, oedema, and hepatic cirrhosis.  
XX  
PS Claim 32; Page 1-2; 23pp; English.  
XX  
CC The invention relates to natriuretic derivatives, containing a lipophilic  
CC substituent attached to any one amino acid residue. Also new are  
CC natriuretic derivatives as above, but with two attached lipophilic  
CC substituents. Atrial natriuretic (ANP) and brain natriuretic (BNP)  
CC peptides are already used in treatment of various diseases, and it is  
CC believed that the lipophilic derivatives will have similar uses. These  
CC diseases include hypertension, congestive heart failure, oedema, renal  
CC disorders, and hepatic cirrhosis. The lipophilic group protects the  
CC peptide from metabolic breakdown, increasing the duration of action. The  
CC present sequence represents BNP  
XX  
SQ Sequence 32 AA;  
  
Query Match 100.0%; Score 169; DB 2; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
QY 1 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 32  
1 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 32  
Db  
  
RESULT 6  
AAB82550 ID AAB82550 standard; peptide; 32 AA.  
XX  
AC AAB82550;  
XX  
DT 17-SEP-2001 (first entry)  
XX  
DE Human brain natriuretic peptide.  
XX  
KW Brain natriuretic peptide; BNP; Dendroaspis natriuretic peptide; DNP;  
KW human; snake venom; diuretic; vasodilator; renin-suppressor;  
KW heart failure; therapy.  
XX  
OS Homo sapiens.  
XX  
FH Key Location/Qualifiers  
FT Disulfide-bond 10..25  
FT WO200144284-A2.  
XX  
PN 21-JUN-2001.  
XX  
PD 15-DEC-2000; 2000WO-US034080.  
XX  
PF 17-DEC-1999; 99US-00466268.  
XX  
PR (MAYO-) MAYO FOUND MEDICAL EDUCATION & RES.  
XX  
PI Burnett J, Lisy O;  
XX  
DR WPI; 2001-457339/49.  
XX  
PT Fusion peptides comprising Dendroaspis natriuretic peptides, useful for  
PT treating heart failure and as vasodilators, renin-suppressors and  
PT natriuretics or diuretics.  
XX  
PS Disclosure; Fig 1; 81pp; English.  
XX

CC The present sequence is that of human brain natriuretic peptide (BNP).  
CC The invention provides fusion peptides comprising a biologically active  
CC portion of Dendroaspis natriuretic peptide (DNP). DNP is obtained from  
CC the venom of the green mamba snake, Dendroaspis angusticeps. It contains  
CC a 17-amino acid disulfide ring structure similar to that of BNP. Claimed  
CC methods of treating, inhibiting or preventing heart failure in a mammal  
CC (human, rat, mouse, dog, cattle, horse, sheep, goat or cat) involve  
CC administering DNP or a chimeric peptide including a portion of DNP (see  
CC AAB82543 and AAB82544) and the N-terminal portion of especially human BNP  
CC or C-type natriuretic peptide. Such peptides may also be used to treat  
CC acute or chronic kidney failure, hypertension, cirrhosis of the liver,  
CC nephrotic syndrome and other oedematous states

XX  
SQ Sequence 32 AA;

Query Match 100.0%; Score 169; DB 4; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMWGSGCFGRKMDRISSSGLGCKVLRH 32  
DB 1 SPKMWGSGCFGRKMDRISSSGLGCKVLRH 32

RESULT 7  
AAB91333  
ID AAB91333 standard; peptide; 32 AA.

XX  
AC AAB91333;

XX  
DT 22-JUN-2001 (first entry)

XX  
DE Brain natriuretic peptide (BNP) SEQ ID NO:509.

XX  
KW Protection; endogenous therapeutic peptide; peptidase; conjugation;  
KW blood component; modification; succinimidyl; maleimido group; amino;  
KW hydroxyl; thiol; hormone; growth factor; neurotransmitter.

XX  
OS Homo sapiens.  
OS Synthetic.

XX  
PN WO200069900-A2.

XX  
PD 23-NOV-2000.

XX  
PF 17-MAY-2000; 2000WO-US013576.

XX  
PR 17-MAY-1999; 99US-0134406P.

XX  
PR 10-SEP-1999; 99US-0153406P.

XX  
PR 15-OCT-1999; 99US-0159783P.

XX  
PA (CONJ-) CONJUCHEM INC.

XX  
PI Bridon DP, Ezrin AM, Milner PG, Holmes DL, Thibaudau K;

XX  
DR WPI; 2001-112059/12.

XX  
PT Modifying and attaching therapeutic peptides to albumin prevents  
PT peptidase degradation, useful for increasing length of in vivo activity.

XX  
PS Disclosure; Page 366; 733pp; English.

XX  
CC The present invention describes a modified therapeutic peptide (I)  
CC comprising a therapeutically active amino acid region (III) and a  
CC reactive group (II) (e.g. succinimidyl and maleimido groups) attached to  
CC a less therapeutically active amino acid region (IV), which covalently  
CC bonds with amino/hydroxyl/thiol groups on blood components to form a  
CC peptidase stabilised therapeutic peptide composed of 3-50 amino acids.  
CC (I) are useful for modifying therapeutic peptides e.g. hormones, growth  
CC factors and neurotransmitters, to protect them from peptidase activity in  
CC vivo for the treatment of various disorders. Endogenous therapeutic  
CC peptides are not suitable as drug candidates as they require frequent  
CC administration due to rapid degradation by peptidases in the body.

CC Modifying and attaching therapeutic peptides to albumin prevents or  
CC reduces the action of peptidases to increase length of activity (half  
CC life) and specificity as bonding to large molecules decreases  
CC intracellular uptake and interference with physiological processes.  
CC AAB90829 to AAB92441 represent peptides which can be used in the  
CC exemplification of the present invention

XX  
SQ Sequence 32 AA;

Query Match 100.0%; Score 169; DB 4; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMWGSGCFGRKMDRISSSGLGCKVLRH 32  
DB 1 SPKMWGSGCFGRKMDRISSSGLGCKVLRH 32

RESULT 8  
AAB91340  
ID AAB91340 standard; peptide; 32 AA.

XX  
AC AAB91340;

XX  
DT 22-JUN-2001 (first entry)

XX  
DE Brain natriuretic peptide (BNP) SEQ ID NO:516.

XX  
KW Protection; endogenous therapeutic peptide; peptidase; conjugation;  
KW blood component; modification; succinimidyl; maleimido group; amino;  
KW hydroxyl; thiol; hormone; growth factor; neurotransmitter.

XX  
OS Homo sapiens.  
OS Synthetic.

XX  
PN WO200069900-A2.

XX  
PD 23-NOV-2000.

XX  
PF 17-MAY-2000; 2000WO-US013576.

XX  
PR 17-MAY-1999; 99US-0134406P.

XX  
PR 10-SEP-1999; 99US-0153406P.

XX  
PR 15-OCT-1999; 99US-0159783P.

XX  
PA (CONJ-) CONJUCHEM INC.

XX  
PI Bridon DP, Ezrin AM, Milner PG, Holmes DL, Thibaudau K;

XX  
DR WPI; 2001-112059/12.

XX  
PT Modifying and attaching therapeutic peptides to albumin prevents  
PT peptidase degradation, useful for increasing length of in vivo activity.

XX  
PS Disclosure; Page 369; 733pp; English.

XX  
CC The present invention describes a modified therapeutic peptide (I)  
CC comprising a therapeutically active amino acid region (III) and a  
CC reactive group (II) (e.g. succinimidyl and maleimido groups) attached to  
CC a less therapeutically active amino acid region (IV), which covalently  
CC bonds with amino/hydroxyl/thiol groups on blood components to form a  
CC peptidase stabilised therapeutic peptide composed of 3-50 amino acids.  
CC (I) are useful for modifying therapeutic peptides e.g. hormones, growth  
CC factors and neurotransmitters, to protect them from peptidase activity in  
CC vivo for the treatment of various disorders. Endogenous therapeutic  
CC peptides are not suitable as drug candidates as they require frequent  
CC administration due to rapid degradation by peptidases in the body.  
CC Modifying and attaching therapeutic peptides to albumin prevents or  
CC reduces the action of peptidases to increase length of activity (half  
CC life) and specificity as bonding to large molecules decreases  
CC intracellular uptake and interference with physiological processes.  
CC AAB90829 to AAB92441 represent peptides which can be used in the  
CC exemplification of the present invention

XX Sequence 32 AA;  
SQ Query Match 100.0%; Score 169; DB 4; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMWQSGGCFGRKMDRISSSGIGCKVLRH 32  
1 SPKMWQSGGCFGRKMDRISSSGIGCKVLRH 32  
Db 1 SPKMWQSGGCFGRKMDRISSSGIGCKVLRH 32

RESULT 9  
AAB45739  
ID AAB45739 standard; protein; 32 AA.  
XX AAB45739;  
AC AAB45739;  
XX 15-MAR-2001 (first entry)  
DT Human mature BNP.  
DE BNP; brain natriuretic peptide; heart failure; vascular restenosis; DNP;  
XX D-type natriuretic peptide; antiarteriosclerotic; cardiast; vasospasm;  
KW antihypertensive; cardiac muscle; pulmonary hypertension; human; ss.  
XX Homo sapiens.  
OS WO200071576-A2.  
XX 30-NOV-2000.  
PD 24-MAY-2000; 2000WO-US014351.  
XX 24-MAY-1999; 99US-0135490P.  
PR 24-MAY-1999;  
XX (MAYO-) MAYO FOUND MEDICAL EDUCATION & RES.  
PA (SIMA/) SIMARI R.  
XX Simari R;  
PI WPI; 2001-025135/03.  
XX N-PSDB; AAC82677.  
DR Inhibiting or preventing heart failure, hypertension and atherosclerosis,  
PT involves administering a composition comprising a nucleic acid molecule  
PT encoding brain natriuretic peptide in a delivery vehicle.  
XX Disclosure; Page 80; 83pp; English.

XX This invention describes a novel method for inhibiting or preventing (I)  
CC heart failure in a mammal, by administering a composition containing a  
CC nucleic acid molecule (NAM) comprising a nucleic acid segment encoding  
CC brain natriuretic peptide (BNP), D-type natriuretic peptide (DNP) or its  
CC chimera, in a delivery vehicle. The invention also describes (1) an  
CC isolated and purified NAM (II) comprising a nucleic acid segment encoding  
CC a chimeric natriuretic peptide containing at least a portion of DNP; (2)  
CC an adeno-associated virus vector (III) comprising a NAM containing a  
CC nucleic acid segment encoding BNP, DNP or its chimera operably linked to  
CC transcriptional regulatory elements; (3) an adenovirus vector (IV)  
CC comprising a NAM containing a nucleic acid segment encoding DNP or its  
CC chimera operably linked to transcriptional regulatory elements; and (4) a  
CC composition comprising (II), (III), or (IV) and a delivery vehicle. The  
CC products of the invention have antiarteriosclerotic, cardiast and  
CC antihypertensive activity. The method is useful for inhibiting or  
CC preventing heart failure in a mammal, and also to relax cardiac muscle, to  
CC increase BNP levels in a mammal, to detect progression of heart failure  
CC in a mammal subjected to brain natriuretic gene therapy, to inhibit or  
CC prevent vasospasm and pulmonary hypertension in a mammal. DNP and BNP are  
CC also useful for inhibiting or preventing atherosclerosis and vascular  
CC restenosis  
XX Sequence 32 AA;  
SQ

XX Query Match 100.0%; Score 169; DB 4; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMWQSGGCFGRKMDRISSSGIGCKVLRH 32  
1 SPKMWQSGGCFGRKMDRISSSGIGCKVLRH 32  
Db 1 SPKMWQSGGCFGRKMDRISSSGIGCKVLRH 32

RESULT 10  
AAE12434  
ID AAE12434 standard; peptide; 32 AA.  
XX AAE12434;  
AC AAE12434;  
XX 03-JAN-2002 (first entry)  
DT Human brain natriuretic peptide (BNP).  
DE Prophylaxis; ischaemic heart disease; myocardial infarction; human;  
XX ischaemia reperfusion injury; ischaemic heart disease; infarct region;  
KW vasotropic; brain natriuretic peptide; BNP.  
XX Homo sapiens.  
OS Key Location/Qualifiers  
FH Disulfide-bond 10.26  
FT US2001027181-A1.  
XX 04-OCT-2001.  
PD 03-JAN-2001; 2001US-00752724.  
XX 31-MAR-2000; 2000JP-00098134.  
PR (KITA/) KITAKAZE M.  
XX Kitakaze M;  
PI WPI; 2001-638528/73.  
XX Composition for the treatment or prophylaxis of ischemic heart disease  
PT i.e. myocardial infarction, comprises a substance which can increase  
PT intracellular cGMP production by acting on a natriuretic peptide  
PT receptor.  
XX Disclosure; Page 4; 9pp; English.

XX The invention relates to a pharmaceutical composition for the treatment  
CC or prophylaxis of ischaemic heart disease, comprises a substance as an  
CC active ingredient, which can increase intracellular cGMP production by  
CC acting on a natriuretic peptide receptor and which has an effect of  
CC reducing an infarct region. The composition is useful for suppressing  
CC ischaemia reperfusion injury in the treatment of ischaemic heart disease,  
CC preferably myocardial infarction. The present sequence is human brain  
CC natriuretic peptide (BNP)  
XX Sequence 32 AA;  
SQ Query Match 100.0%; Score 169; DB 4; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMWQSGGCFGRKMDRISSSGIGCKVLRH 32  
1 SPKMWQSGGCFGRKMDRISSSGIGCKVLRH 32  
Db 1 SPKMWQSGGCFGRKMDRISSSGIGCKVLRH 32

RESULT 11  
ABG98205  
ID ABG98205 standard; peptide; 32 AA.

XX ABG98205;  
AC  
XX 08-JAN-2003 (first entry)  
DT  
XX  
DE Human brain natriuretic peptide (BNP-32).  
XX  
KW Human; natriuretic peptide; NP; endochondral ossification;  
KW bone formation; cartilage; bone; signalling pathway; FGF;  
KW fibroblast growth factor; cardiovascular homeostasis; diuresis;  
KW natriuresis; vasodilation; atrial natriuretic peptide; ANP;  
KW brain natriuretic peptide; BNP; C-type natriuretic peptide; CNP;  
KW dendroaspis natriuretic peptide; DNP; NPR-A; NPR-B;  
KW guanylyl cyclase domain; CGMP; neutral endopeptidase; NEP;  
KW skeletal dysplasia; achondroplasia; osteopathic.  
XX  
OS Homo sapiens.  
XX  
PN WO200274234-A2.  
XX  
PD 26-SEP-2002.  
XX  
PF 20-MAR-2002; 2002WO-IL000229.  
XX  
PR 20-MAR-2001; 2001IL-00142118.  
PR 20-MAR-2001; 2001US-0276939P.  
XX  
PA (PROC-) PROCHON BIOTECH LTD.  
XX  
PI Golembo M, Yayon A;  
XX  
DR WPI; 2002-750515/81.  
XX  
PT Pharmaceutical composition useful in the treatment of skeletal dysplasias  
PT e.g. achondroplasia comprises at least one natriuretic peptide.  
XX  
PS Claim 4; Fig 3; 41pp; English.  
XX  
CC The invention discloses a pharmaceutical composition comprising at least  
CC one natriuretic peptide (NP), or its variant, and a carrier or excipient.  
CC Endochondral ossification is a fundamental mechanism for bone formation,  
CC whereby cartilage is replaced by bone. Endochondral ossification is the  
CC result of the concerted action of several signalling pathways, most  
CC notably the pathway triggered by the activation of the fibroblast growth  
CC factor (FGF). Natriuretic peptides are also known for their role in  
CC cardiovascular homeostasis, diuresis, natriuresis and vasodilation. Four  
CC isoforms exist - atrial natriuretic peptide (ANP), brain natriuretic  
CC peptide (BNP), C-type natriuretic peptide (CNP) and the dendroaspis  
CC natriuretic peptide (DNP). NP's effect their biological role through two  
CC receptors, NPR-A and NPR-B, having cytoplasmic guanylyl cyclase domains  
CC which are activated upon ligand binding and lead to accumulation of  
CC intracellular cGMP. They are cleaved by neutral endopeptidases (NEPs) and  
CC inhibition of the NEPs increases the concentration of the NPs in the  
CC circulation. The invention discloses compositions comprising NP secreting  
CC cells and methods for treating skeletal dysplasias involving  
CC transplanting or implanting the natriuretic peptide secreting cells. The  
CC NP secreting cells are useful in the manufacture of a medicament for the  
CC treatment of skeletal dysplasia (e.g. achondroplasia), for elongation of  
CC abnormal bone and for increasing the size of bone growth plate in  
CC abnormal bone (e.g. limb bone). The compositions induce bone elongation  
CC in abnormal bone growth and enhance NP stabilisation in circulation. The  
CC sequences presented in ABG98202-ABG98272 are the CNP peptide and  
CC variants, with differing levels of activity, designed from it. The  
CC degenerate peptide is presented in ABG98206  
XX  
SQ Sequence 32 AA;  
Query Match 100.0%; Score 169; DB 5; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

DB 1 SPKMWQSGGCFGRKMDRISSSSGIGCKVLRH 32  
RESULT 12  
ADA00765  
ID ADA00765 standard; peptide; 32 AA.  
XX  
AC ADA00765;  
XX  
DT 06-NOV-2003 (first entry)  
XX  
DE Human natriuretic peptide BNP.  
XX  
KW Human; natriuretic protein; atrial natriuretic peptide; ANP; ANF;  
KW hypotensive; hepatotropic; nephrotropic; cardiac; vasodilator;  
KW hepatotropic; respiratory; clearance receptor;  
KW natriuretic peptide receptor; hNPR-C; hANF(1-28); human A receptor;  
KW hNPR-A; neutral endopeptidase 11.24; NEP; natriuresis; diuresis;  
KW vasodilation; renin-angiotensin II; aldosterone; electrolyte imbalance;  
KW hypertension; renovascular hypertension; congestive heart failure; CHF;  
KW nephrotic syndrome; hepatic cirrhosis; pulmonary disease; renal failure;  
KW urodilatin.  
XX  
OS Homo sapiens.  
XX  
PN US6525022-B1.  
XX  
PD 25-FEB-2003.  
XX  
PF 16-SEP-1998; 98US-00154390.  
XX  
PR 12-NOV-1993; 93US-00152994.  
PR 04-NOV-1994; 94WO-US012591.  
PR 06-JAN-1995; 95US-00362552.  
PR 11-APR-1995; 95US-00419877.  
PR 06-JUN-1995; 95US-00470846.  
XX  
PA (GETH ) GENENTECH INC.  
XX  
PI Lowe DG, Cunningham BC, Oare D, McDowell RS, Burnier JP;  
XX  
DR WPI; 2003-553629/52.  
XX  
PT Novel variant of atrial natriuretic factor, useful as therapeutic agent  
PT for treating hypertension, congestive heart failure, nephrotic syndrome,  
PT hepatic cirrhosis, pulmonary disease and renal failure.  
XX  
PS Disclosure; Fig 1; 51pp; English.  
XX  
CC The invention relates to an atrial natriuretic factor (ANF, also known as  
CC ANP, a natriuretic peptide)comprising one or more amino acid  
CC substitutions selected from Gly9Thr, Gly9a, Gly9Arg, Arg15Ser, Arg15asp,  
CC Gly16Arg, Gly16Lys, Gly16Orn, Gly16Har, and Gly16p-amidinophenyl Ala.  
CC Also included is a composition comprising nucleic acid encoding the ANF  
CC variant. The ANF has a decreased binding affinity for the human clearance  
CC receptor, natriuretic peptide receptor (hNPR)-C, compared to wild-type  
CC hANF(1-28) and an equal or higher binding affinity for the human A  
CC receptor, hNPR-A, compared to wild-type hANF(1-28). The binding affinity  
CC for hNPR-C is less than 50% or 10% of the affinity of wild-type ANF. The  
CC ANF variant has an increased half-life relative to wild-type hANF(1-28)  
CC when incubated with neutral endopeptidase 11.24 (NEP). The ANF variant is  
CC useful for inducing natriuresis, diuresis or vasodilation or inhibit  
CC renin-angiotensin II and aldosterone release and as therapeutic agents in  
CC the treatment of various pathological conditions associated with water or  
CC electrolyte imbalance and hypertension, especially renovascular  
CC hypertension, congestive heart failure (CHF), nephrotic syndrome and  
CC hepatic cirrhosis, pulmonary disease and renal failure due to ineffective  
CC renal perfusion or reduced glomerular filtration rate, to modulate the  
CC activity of other diuretic, natriuretic or vasorelaxant compounds by  
CC binding to alternate receptors, stimulating receptor turnover, or  
CC providing alternate substrates for degradative enzyme of receptor  
CC activity and inhibiting these enzymes or receptors. The present sequence  
CC is a human natriuretic peptide.



XX Sequence 32 AA;  
SQ  
Query Match 100.0%; Score 169; DB 6; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 SPKMWGSGCGFRKMDRISSSGLGCKVLRH 32  
1 SPKMWGSGCGFRKMDRISSSGLGCKVLRH 32  
DB  
RESULT 13  
ADA00784  
ID ADA00784 standard; peptide; 32 AA.  
XX ADA00784;  
AC  
XX 06-NOV-2003 (first entry)  
DT  
XX  
DE Human natriuretic peptide BNP 1-28.  
XX  
XX Human; natriuretic protein; atrial natriuretic peptide; ANP; ANF;  
KM hypotensive; hepatotropic; nephrotropic; cardiact; vasodilator;  
KM hepatotropic; respiratory; clearance receptor;  
KM natriuretic peptide receptor; hNPR-C; hANF(1-28); human A receptor;  
KM hNPR-A; neutral endopeptidase 11.24; NEP; natriuresis; diuresis;  
KM vasodilation; renin-angiotensin II; aldosterone; electrolyte imbalance;  
KM hypertension; renovascular hypertension; congestive heart failure; CHF;  
KM nephrotic syndrome; hepatic cirrhosis; pulmonary disease; renal failure;  
KM mutant; mutein.  
XX  
XX Synthetic.  
OS Homo sapiens.  
XX  
XX US6525022-B1.  
PN  
XX  
XX 25-FEB-2003.  
PD  
XX  
XX 16-SEP-1998; 98US-00154390.  
PF  
XX  
XX 12-NOV-1993; 93US-00152994.  
PR 04-NOV-1994; 94WO-US012591.  
PR 06-JAN-1995; 95US-00362552.  
PR 11-APR-1995; 95US-00419877.  
PR 06-JUN-1995; 95US-00470846.  
XX  
XX (GETH ) GENENTECH INC.  
PA  
XX  
XX Lowe DG, Cunningham BC, Oare D, McDowell RS, Burnier JP;  
PI  
XX WPI; 2003-553629/52.  
DR  
XX  
XX Novel variant of atrial natriuretic factor, useful as therapeutic agent  
PT for treating hypertension, congestive heart failure, nephrotic syndrome,  
PT hepatic cirrhosis, pulmonary disease and renal failure.  
PT  
XX  
XX Disclosure; Col 7; 51pp; English.  
PS  
XX  
XX The invention relates to an atrial natriuretic factor (ANF, also known as  
CC ANP, a natriuretic peptide)comprising one or more amino acid  
CC substitutions selected from Gly9Thr, Gly9a, Gly9Arg, Arg1Ser, Arg1Asp,  
CC Gly16Arg, Gly16Lys, Gly16Orn, Gly16His, and Gly16p-amidinophenyl Ala.  
CC Also included is a composition comprising nucleic acid encoding the ANF  
CC variant. The ANF has a decreased binding affinity for the human clearance  
CC receptor, natriuretic peptide receptor (hNPR)-C, compared to wild-type  
CC hANF(1-28) and an equal or higher binding affinity for the human A  
CC receptor, hNPR-A, compared to wild-type hANF(1-28). The binding affinity  
CC for hNPR-C is less than 50% or 10% of the affinity of wild-type ANF. The  
CC ANF variant has an increased half-life relative to wild-type hANF(1-28)  
CC when incubated with neutral endopeptidase 11.24 (NEP). The ANF variant is  
CC useful for inducing natriuresis, diuresis or vasodilation or inhibit  
CC renin-angiotensin II and aldosterone release and as therapeutic agents in

CC the treatment of various pathological conditions associated with water or  
CC electrolyte imbalance and hypertension, especially renovascular  
CC hypertension, congestive heart failure (CHF), nephrotic syndrome and  
CC hepatic cirrhosis, pulmonary disease and renal failure due to ineffective  
CC renal perfusion or reduced glomerular filtration rate, to modulate the  
CC activity of other diuretic, natriuretic or vasorelaxant compounds by  
CC binding to alternate receptors, stimulating receptor turnover, or  
CC providing alternate substrates for degradative enzyme of receptor  
CC activity and inhibiting these enzymes or receptors. The present sequence  
CC is the an ANF variant/mutant of the invention.  
XX  
XX Sequence 32 AA;  
SQ  
Query Match 100.0%; Score 169; DB 6; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 SPKMWGSGCGFRKMDRISSSGLGCKVLRH 32  
1 SPKMWGSGCGFRKMDRISSSGLGCKVLRH 32  
DB  
RESULT 14  
ABU63215  
ID ABU63215 standard; peptide; 32 AA.  
XX ABU63215;  
AC  
XX 15-OCT-2003 (first entry)  
DT  
XX  
DE Human brain natriuretic peptide (BNP).  
XX  
XX Natriuretic; renin-suppressing; diuretic; vasodilator; heart failure;  
KM cardiovascular disorder; congestive heart failure; hypertension;  
KM acute kidney failure; chronic kidney failure; liver cirrhosis;  
KM nephrotic syndrome; oedematous state; cardiact; BNP; human;  
KM brain natriuretic peptide.  
XX  
XX Homo sapiens.  
OS  
XX  
XX US2003069186-A1.  
PN  
XX  
XX 10-APR-2003.  
PD  
XX  
XX 26-MAR-2002; 2002US-00106806.  
PF  
XX  
XX 17-DEC-1999; 99US-00466268.  
PR  
XX  
XX (BURN/) BURNETT J C.  
PA (LISY/) LISY O.  
PA  
XX  
XX Burnett JC, Lisy O;  
PI  
XX  
XX WPI; 2003-576433/54.  
DR  
XX  
XX Novel peptide compound useful for treating or preventing cardiovascular  
PT disorders e.g. congestive heart failure, has natriuretic, renin-  
PT suppressing, diuretic and/or vasodilator activity in mammals.  
PT  
XX  
XX Disclosure; Fig 1; 43pp; English.  
PS  
XX  
XX The present invention relates to chimeric peptides having natriuretic,  
CC renin-suppressing, diuretic and/or vasodilator activity in mammals. The  
CC peptides of the invention are useful for treating heart failure in a  
CC mammal e.g. human, rat, mouse, canine, bovine, equine, ovine, caprine or  
CC feline. They are useful for treating and preventing cardiovascular  
CC disorders e.g. congestive heart failure, acute or chronic kidney failure,  
CC hypertension, cirrhosis of liver, nephrotic syndrome and other oedematous  
CC states. The present sequence represents human brain natriuretic peptide  
CC (BNP)  
XX  
XX Sequence 32 AA;

Query Match 100.0%; Score 169; DB 6; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1e-16;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMYGSGCGFGRKMDRISSSSGLGCKVLRH 32  
Db 1 SPKMYGSGCGFGRKMDRISSSSGLGCKVLRH 32

RESULT 15

ADD55931

ID ADD55931 standard; peptide; 32 AA.

AC ADD55931;

DT 15-JAN-2004 (first entry)

DE Human B-type natriuretic peptide (BNP).

KW human; congestive heart failure; CHF; natriuretic peptide;

XX B-type natriuretic peptide; BNP.

OS Homo sapiens.

FH Key Location/Qualifiers

FT Disulfide-bond 10..26

PN WO2003079979-A2.

PD 02-OCT-2003.

PF 18-MAR-2003; 2003WO-US008215.

PR 18-MAR-2002; 2002US-0364736P.

PA (SCIO-) SCIOS INC.

PI Schreiner GF;

DR WPI; 2003-767771/72.

PT Treating congestive heart failure (CHF) in a mammal, comprises  
PT administration of a natriuretic peptide.

PS Disclosure; SEQ ID NO 1; 58pp; English.

CC The invention comprises a method for treating congestive heart failure  
CC (CHF), the method involves administering a natriuretic peptide (e.g.  
CC human B-type natriuretic peptide). The method is useful for treating  
CC congestive heart failure in a mammal that is in a compensated or  
CC decompensated state of congestive heart failure. The present amino acid  
CC sequence represents the human B-type natriuretic peptide (BNP).

SQ Sequence 32 AA;

Query Match 100.0%; Score 169; DB 7; Length 32;

Best Local Similarity 100.0%; Pred. No. 1e-16;

Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMYGSGCGFGRKMDRISSSSGLGCKVLRH 32  
Db 1 SPKMYGSGCGFGRKMDRISSSSGLGCKVLRH 32

Search completed: March 29, 2004, 14:41:27  
Job time : 56 secs



GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: March 29, 2004, 14:37:49 ; Search time 21 seconds  
(without alignments)  
146.578 Million cell updates/sec

Title: US-09-902-517-49  
Perfect score: 169  
Sequence: 1 SPKMVGSGCFGRKMDRISSSSGLGCKVLRH 32

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 283366 seqs, 96191526 residues

Total number of hits satisfying chosen parameters: 283366

Minimum DB seq length: 0  
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : PIR 78:\*  
1: p1r1:\*  
2: p1r2:\*  
3: p1r3:\*  
4: p1r4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Match	Query length	DB ID	Description
1	169	100.0	134	1 AWHUB	natriuretic peptid
2	124	73.4	103	2 A41403	aldosterone secret
3	123	72.8	105	2 B36736	brain natriuretic
4	122	72.2	131	2 A33873	brain natriuretic
5	122	72.2	131	2 A31676	brain natriuretic
6	106	62.7	27	2 JC1081	brain natriuretic
7	101	59.8	140	1 S14320	alpha-atrial natri
8	87	51.5	149	1 AWDG	atrial natriuretic
9	87	51.5	150	1 S13107	atrial natriuretic
10	87	51.5	151	1 AWHU	natriuretic peptid
11	87	51.5	152	1 AWHU	atrial natriuretic
12	87	51.5	153	2 S14873	atrial natriuretic
13	86	50.9	38	2 S71381	lebetin 2 isoform
14	83	49.1	153	1 AWRB	atrial natriuretic
15	82	48.5	121	1 A30162	brain natriuretic
16	82	48.5	152	1 AWRB	atrial natriuretic
17	82	48.5	152	1 AWRB	atrial natriuretic
18	82	48.5	152	1 AWRB	atrial natriuretic
19	81	47.9	161	4 S15480	atrial natriuretic
20	79	46.7	126	2 S14872	natriuretic peptid
21	79	46.7	126	1 AWHUC	natriuretic peptid
22	79	46.7	126	2 S12988	brain natriuretic
23	79	46.7	126	2 A55688	natriuretic peptid
24	78	46.2	22	2 A35418	brain natriuretic
25	77	45.6	36	2 S15821	ventricular natriu
26	77	45.6	121	2 A49144	type-B natriuretic
27	77	45.6	121	2 A49548	brain natriuretic
28	76	45.0	118	2 B54119	C-type natriuretic
29	75	44.4	115	1 S15822	natriuretic peptid

30	74	43.8	22	2 A36399	C-type natriuretic
31	74	43.8	27	2 A33431	atrial natriuretic
32	74	43.8	129	1 A54119	c-type natriuretic
33	72	42.6	22	2 JT0581	natriuretic peptid
34	72	42.6	30	2 S01657	atrial natriuretic
35	72	42.6	145	1 JQ0947	atrial natriuretic
36	70	41.4	135	1 A61244	natriuretic peptid
37	69	40.8	38	2 A42974	natriuretic peptid
38	54	32.0	718	2 AD2355	polyribonucleotide
39	52	30.8	111	2 AB2842	conserved hypothet
40	52	30.8	111	2 C97619	hypothetical prote
41	52	30.8	1067	2 T18196	pol protein - silk
42	51	30.2	594	2 T34855	probable glyoxylat
43	50	29.6	148	2 D64760	yahr protein - Esc
44	50	29.6	718	2 S74509	polyribonucleotide
45	49	29.0	383	2 A49562	cartilage glycopro

ALIGNMENTS

RESULT 1

AWHUB

natriuretic peptide B precursor [validated] - human

N/Alternate names: brain natriuretic factor-32 (BNF-32); brain natriuretic protein pre

N/Contains: brain alpha natriuretic peptide; brain gamma natriuretic factor

C/Species: Homo sapiens (man)

C/Date: 07-Sep-1990 #sequence revision 02-Dec-1994 #text\_change 08-Dec-2000

C/Accession: A36736; A30163; A34143; A34661; B34661

R/Seilhamer, J.J.; Arfsten, A.; Miller, J.A.; Lundquist, P.; Scarborough, R.M.; Lewick

Biochem. Biophys. Res. Commun. 165, 650-658, 1989

A/Title: Human and canine gene homologs of porcine brain natriuretic peptide.

A/Reference number: A36736; MUID:90088474; PMID:2597152

A/Accession: A36736

A/Molecule type: DNA

A/Residues: 1-134 <SEI>

A/Cross-references: GB:M31776; NID:G179514; PIDN:AAA35603.1; PID:G179515

R/Sudo, T.; Maekawa, K.; Kojima, M.; Minamino, N.; Kangawa, K.; Matsuo, H.

Biochem. Biophys. Res. Commun. 159, 1427-1434, 1989

A/Title: Cloning and sequence analysis of cDNA encoding a precursor for human brain ne

A/Reference number: A30163; MUID:89193743; PMID:2522777

A/Accession: A30163

A/Molecule type: mRNA

A/Residues: 1-134 <SUD>

A/Cross-references: GB:M31776; NID:G179514; PIDN:AAA35603.1; PID:G179515

R/Kambayashi, Y.; Nakao, K.; Mukoyama, M.; Saito, Y.; Ogawa, Y.; Shiono, S.; Inouye, I

FEBS Lett. 259, 341-345, 1990

A/Title: Isolation and sequence determination of human brain natriuretic peptide in hu

A/Reference number: A34143; MUID:90092577; PMID:2136732

A/Accession: A34143

A/Molecule type: protein

A/Residues: 103-134 <KAM>

R/Hino, J.; Tateyama, H.; Minamino, N.; Kangawa, K.; Matsuo, H.

Biochem. Biophys. Res. Commun. 167, 693-700, 1990

A/Title: Isolation and identification of human brain natriuretic peptides in cardiac e

A/Reference number: A90161; MUID:90211249; PMID:2138890

A/Accession: A34661

A/Molecule type: protein

A/Residues: 27-58 <HIN>

A/Accession: B34661

A/Molecule type: protein

A/Residues: 103-134 <HI2>

C/Genetics:

A/Gene: GDB:NPB

A/Cross-references: GDB:127884; OMIM:600295

A/Map position: 1P36-1P36

A/Introns: 44/3; 130/1

C/Superfamily: natriuretic peptide A precursor

C/Keywords: brain; diuretic; hormone; natriuretic; osmoregulation

F;1-26/Domain: signal sequence #status predicted <SIG>

F;27-134/Product: brain gamma natriuretic factor #status experimental <GNF>

F;103-134/Product: brain alpha natriuretic peptide #status experimental <ANF>

F;112-128/Disulfide bonds: #status predicted

Query Match 100.0%; Score 169; DB 1; Length 134;  
Best Local Similarity 100.0%; Pred. No. 9e-17;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 32  
Db 103 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 134

## RESULT 2

aldosterone secretion inhibitory factor precursor - bovine  
A41403  
C/Species: Bos primigenius taurus (cattle)  
C/Date: 30-Jun-1992 #sequence\_revision 30-Jun-1992 #text\_change 03-Mar-1995  
C/Accession: A41403; A30976  
R;Nguyen, T.T.; Lazure, C.; Babinaki, K.; Chretien, M.; De Lean, A.; Ong, H.  
Mol. Endocrinol. 3, 1823-1829, 1989  
A/Title: Purification and primary structure of pro-aldosterone secretion inhibitory factor  
A/Reference number: A41403; MUID:90114187; PMID:2532709  
A/Accession: A41403  
A/Molecule type: protein  
A/Residues: 1-103 <NGU>  
R;Nguyen, T.T.; Lazure, C.; Babinaki, K.; Chretien, M.; Ong, H.; de Lean, A.  
Endocrinology 124, 1591-1593, 1989  
A/Title: Aldosterone secretion inhibitory factor: a novel neuropeptide in bovine chromaffin cells  
A/Reference number: A30976; MUID:89136947; PMID:2537187  
A/Accession: A30976  
A/Molecule type: protein  
A/Residues: 69-103 <NG2>  
C/Superfamily: natriuretic peptide A precursor

Query Match 73.4%; Score 124; DB 2; Length 103;  
Best Local Similarity 71.0%; Pred. No. 1.8e-10;  
Matches 22; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

OY 2 PKMVGSGCGFRKMDRISSSSGLGCKVLRH 32  
Db 73 PKMVGSGCGFRKMDRISSSSGLGCKVLRH 103

## RESULT 3

B36736  
brain natriuretic peptide - dog  
C/Species: Canis lupus familiaris (dog)  
C/Date: 19-Apr-1991 #sequence\_revision 19-Apr-1991 #text\_change 09-Dec-1994  
C/Accession: B36736  
R;Seilhamer, J.J.; Arfsten, A.; Miller, J.A.; Lundquist, P.; Scarborough, R.M.; Lewicki, J.  
Biochem. Biophys. Res. Commun. 165, 650-658, 1989  
A/Title: Human and canine gene homologs of porcine brain natriuretic peptide.  
A/Reference number: A36736; MUID:90088474; PMID:2597152  
A/Accession: B36736  
A/Status: preliminary  
A/Molecule type: DNA  
A/Residues: 1-105 <SEI>  
A/Cross-references: GB:M31777  
C/Superfamily: natriuretic peptide A precursor

Query Match 72.8%; Score 123; DB 2; Length 105;  
Best Local Similarity 68.8%; Pred. No. 2.5e-10;  
Matches 22; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

OY 1 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 32  
Db 74 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 105

## RESULT 4

A33873  
brain natriuretic peptide precursor - pig  
C/Species: Sus scrofa domestica (domestic pig)  
C/Date: 27-Feb-1990 #sequence\_revision 27-Feb-1990 #text\_change 16-Jul-1999  
C/Accession: A33873; A31675

R;Porter, J.G.; Arfsten, A.; Palisi, T.; Scarborough, R.M.; Lewicki, J.A.; Seilhamer, J.  
J. Biol. Chem. 264, 6689-6692, 1989  
A/Title: Cloning of a cDNA encoding porcine brain natriuretic peptide.  
A/Reference number: A33873; MUID:89214071; PMID:2708334  
A/Accession: A33873  
A/Status: preliminary  
A/Molecule type: mRNA  
A/Residues: 1-131 <POR>

A/Cross-references: GB:M25547; GB:J04708; GB:M22477; GB:M22478; NID:g164392; PIDN:AAA  
R;Minamino, N.; Kangawa, K.; Matsuo, H.  
Biochem. Biophys. Res. Commun. 157, 402-409, 1988  
A/Title: Isolation and identification of a high molecular weight brain natriuretic peptide  
A/Reference number: A31675; MUID:89061743; PMID:3196347  
A/Accession: A31675  
A/Status: preliminary  
A/Molecule type: protein  
A/Residues: 26-131 <MIN>  
C/Superfamily: natriuretic peptide A precursor

Query Match 72.2%; Score 122; DB 2; Length 131;  
Best Local Similarity 68.8%; Pred. No. 4.4e-10;  
Matches 22; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

OY 1 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 32  
Db 100 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 131

## RESULT 5

A31676  
brain natriuretic factor precursor - pig  
N/Alternate names: brain natriuretic factor 32  
C/Species: Sus scrofa domestica (domestic pig)  
C/Date: 21-May-1990 #sequence\_revision 21-May-1990 #text\_change 16-Jul-1999  
C/Accession: A31676; A31517; S06359  
R;Maekawa, K.; Sudoh, T.; Furusawa, M.; Minamino, N.; Kangawa, K.; Ohkubo, H.; Nakanishi, K.  
Biochem. Biophys. Res. Commun. 157, 410-416, 1988  
A/Title: Cloning and sequence analysis of cDNA encoding a precursor for porcine brain natriuretic factor  
A/Reference number: A31676; MUID:89061744; PMID:3196348  
A/Accession: A31676  
A/Molecule type: mRNA  
A/Residues: 1-131 <MAE>

A/Cross-references: GB:M23596; NID:9535704; PIDN:AAB59258.1; PID:9535705  
R;Sudoh, T.; Minamino, N.; Kangawa, K.; Matsuo, H.  
Biochem. Biophys. Res. Commun. 155, 726-732, 1988  
A/Title: Brain natriuretic peptide-32: N-terminal six amino acid extended form of brain natriuretic peptide  
A/Reference number: A31517; MUID:88339957; PMID:3421965  
A/Accession: A31517  
A/Molecule type: protein  
A/Residues: 100-131 <SUD>  
R;Sudoh, T.; Kangawa, K.; Minamino, N.; Matsuo, H.  
Nature 332, 78-81, 1988  
A/Title: A new natriuretic peptide in porcine brain.  
A/Reference number: S06359; MUID:88156915; PMID:2964562  
A/Accession: S06359  
A/Molecule type: protein  
A/Residues: 106-131 <SU2>

C/Superfamily: natriuretic peptide A precursor  
C/Keywords: brain; natriuretic  
F,1-25/Domain: signal sequence #status predicted <SIG>  
F,26-131/Product: brain gamma natriuretic factor #status predicted <GAM>  
F,100-131/Product: brain alpha natriuretic peptide #status experimental <ALF>  
F,109-125/Disulfide bonds: #status experimental

Query Match 72.2%; Score 122; DB 2; Length 131;  
Best Local Similarity 68.8%; Pred. No. 4.4e-10;  
Matches 22; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

OY 1 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 32  
Db 100 SPKMVGSGCGFRKMDRISSSSGLGCKVLRH 131



A/Cross-references: GB:X01470; NID:G28687; PIDN:CAA25699.1; PID:G825625  
A/Accession: B22693  
A/Molecule type: DNA  
A/Residues: 1-151, 'RR' <NE2>  
A/Note: allelic variant with UGA termination codon replaced by CGA arginine codon  
R/Oikawa, S.; Imai, M.; Ueno, A.; Tanaka, S.; Noguchi, T.; Nakazato, H.; Kangawa, K.; Fu  
Nature 309, 724-726, 1984  
A/Title: Cloning and sequence analysis of cDNA encoding a precursor for human atrial nat  
A/Reference number: A01424; MUID:84219799; PMID:6203042  
A/Accession: A01424  
A/Molecule type: mRNA  
A/Residues: 1-151 <OIK>  
A/Cross-references: GB:K02043; NID:G178629; PIDN:AAB59379.1; PID:G178630  
R/Seidman, C.E.; Bloch, K.D.; Klein, K.A.; Smith, J.A.; Seidman, J.G.  
Science 226, 1206-1209, 1984  
A/Title: Nucleotide sequences of the human and mouse atrial natriuretic factor genes.  
A/Reference number: A29370; MUID:85065766; PMID:6542248  
A/Accession: B29370  
A/Molecule type: DNA  
A/Residues: 1-64, 'D', 66-151 <SEI>  
A/Cross-references: GB:K02043  
R/Kangawa, K.; Matsuo, H.  
Biochem. Biophys. Res. Commun. 118, 131-139, 1984  
A/Title: Purification and complete amino acid sequence of alpha-human atrial natriuretic  
A/Reference number: A32733; MUID:84128019; PMID:6230082  
A/Accession: A32733  
A/Molecule type: protein  
A/Residues: 124-151 <KAN>  
R/Nakayama, K.; Ohkubo, H.; Hirose, T.; Inayama, S.; Nakanishi, S.  
Nature 310, 699-701, 1984  
A/Title: mRNA sequence for human cardiolipin-atrial natriuretic factor precursor and  
A/Reference number: I58054; MUID:84295577; PMID:6547996  
A/Accession: I58054  
A/Status: translated from GB/EMBL/DBJ  
A/Molecule type: mRNA  
A/Residues: 1-151 <RES>  
A/Cross-references: GB:M30262; NID:G180181; PIDN:AAA35669.1; PID:G180182  
R/Vanneste, Y.; Michel, A.; Deschodt-Lanckman, M.  
Eur. J. Biochem. 196, 281-286, 1991  
A/Title: Hydrolysis of intact and Cys-Phe-cleaved human atrial natriuretic peptide in vi  
A/Reference number: S14097; MUID:91176998; PMID:1826098  
A/Accession: S14097  
A/Molecule type: protein  
A/Residues: 124-151 <VAN>  
A/Note: natural and synthetic peptide subjected to kallikrein proteolysis  
R/Zivin, R.A.; Condra, J.H.; Dixon, R.A.; Seidah, N.G.; Chretien, M.; Nemer, M.; Chamber  
Proc. Natl. Acad. Sci. U.S.A. 81, 6325-6329, 1984  
A/Title: Molecular cloning and characterization of DNA sequences encoding rat and human  
A/Reference number: I39458; MUID:85038509; PMID:6238331  
A/Accession: I39458  
A/Status: preliminary; translated from GB/EMBL/DBJ  
A/Molecule type: mRNA  
A/Residues: 119-151, 'RR' <RE2>  
A/Cross-references: GB:K02044; NID:G178631; PIDN:AAA51730.1; PID:G178632  
R/Maki, M.; Parmentier, M.; Inagami, T.  
Biochem. Biophys. Res. Commun. 125, 797-802, 1984  
A/Title: Cloning of genomic DNA for human atrial natriuretic factor.  
A/Reference number: I39459; MUID:85096983; PMID:6097248  
A/Accession: I39459  
A/Status: preliminary; translated from GB/EMBL/DBJ  
A/Molecule type: DNA  
A/Residues: 1-75 <RE3>  
A/Cross-references: GB:K02399; NID:G178633; PIDN:AAA35528.1; PID:G178634  
R/Seidman, C.E.; Bloch, K.D.; Zisfein, J.; Smit, J.; Haber, E.; Homcy, C.J.; Duby, A.D.;  
Hypertension 7, 31-34, 1985  
A/Title: Molecular studies of the atrial natriuretic factor gene.  
A/Reference number: I39460  
A/Accession: I39460  
A/Status: translated from GB/EMBL/DBJ  
A/Molecule type: DNA  
A/Residues: 1-64, 'D', 66-151 <RE4>  
A/Cross-references: GB:M54951; NID:G178636; PIDN:AAA35529.1; PID:G178638  
R/Greenberg, B.D.; Benven, G.H.; Seilhamer, J.J.; Lewicki, J.A.; Fiddes, J.C.

Nature 312, 656-658, 1984  
A/Title: Nucleotide sequence of the gene encoding human atrial natriuretic factor prec  
A/Reference number: I37167; MUID:85061627; PMID:6095119  
A/Accession: I37167  
A/Status: translated from GB/EMBL/DBJ  
A/Molecule type: DNA  
A/Residues: 26-151 <RE5>  
A/Cross-references: EMBL:X01471; NID:G28690; PIDN:CAA25700.1; PID:G1340150  
C/Comment: Cardiolipin is a vasoconstrictor but not a diuretic or natriuretic.  
C/Genetics:  
A/Gene: GDB:NPPA, ANP, PND  
A/Cross-references: GDB:118727; OMIM:108780  
A/Map position: 1p36-1p36  
A/Introns: 41/3; 150/3  
C/Superfamily: natriuretic peptide A precursor  
C/Keywords: atrium; diuretic; hormone; natriuretic; osmoregulation  
F/1-25/Domain: signal sequence #status predicted <SIG>  
F/26-151/Product: cardiolipin #status predicted <CD>  
F/124-151/Product: atrial alpha natriuretic peptide #status experimental <ANP>  
F/130-146/Disulfide bonds: #status experimental

Query Match 51.5%; Score 87; DB 1; Length 151;  
Best Local Similarity 50.0%; Pred. No. 4.9e-05;  
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

CY 1 SPKMVGSGCGFRKMDRISSSSGLGCKVLR 30  
Db 121 APRSLRRSSCGFRMDRIGAGSLGCNSFR 150

## RESULT 11

AMBO  
Atrial natriuretic peptide precursor 1 bovine  
N/Alternate names: ANP; atrial natriuretic polypeptide  
C/Species: Bos primigenius taurus (cattle)  
C/Date: 30-Jun-1989 #sequence revision 30-Jun-1989 #text\_change 18-Jun-1999  
C/Accession: A90124; A93049; A24247; A26090  
R/Vlasuk, G.P.; Miller, J.; Benven, G.H.; Lewicki, J.A.  
Biochem. Biophys. Res. Commun. 136, 396-403, 1986  
A/Title: Structure and analysis of the bovine atrial natriuretic peptide precursor ger  
A/Reference number: A90124; MUID:86215205; PMID:2939830  
A/Accession: A90124  
A/Molecule type: DNA  
A/Residues: 1-152 <VLA>  
A/Cross-references: GB:M13145; NID:G162665; PIDN:AAA30375.1; PID:G162666  
R/Ong, H.; McNicoll, N.; Lazure, C.; Seidah, N.; Chretien, M.; Cantin, M.; De Lean, A.  
Life Sci. 38, 1309-1315, 1986  
A/Title: Purification and sequence determination of bovine atrial natriuretic factor.  
A/Reference number: A93049; MUID:86173941; PMID:3007908  
A/Accession: A93049  
A/Molecule type: protein  
A/Residues: 123-150 <ONG>  
C/Genetics:  
A/Introns: 40/3; 149/3  
C/Superfamily: natriuretic peptide A precursor  
C/Keywords: atrium; diuretic; hormone; natriuretic; osmoregulation  
F/1-24/Domain: signal sequence #status predicted <SIG>  
F/25-152/Product: gamma atrial natriuretic factor #status predicted <ANF>  
F/123-150/Product: alpha atrial natriuretic peptide #status experimental <ANP>  
F/129-145/Disulfide bonds: #status predicted

Query Match 51.5%; Score 87; DB 1; Length 152;  
Best Local Similarity 50.0%; Pred. No. 4.9e-05;  
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

CY 1 SPKMVGSGCGFRKMDRISSSSGLGCKVLR 30  
Db 120 APRSLRRSSCGFRMDRIGAGSLGCNSFR 149

RESULT 12  
S14873  
atrial natriuretic peptide precursor - horse

C/Species: *Equus caballus* (domestic horse)  
C/Date: 20-Feb-1995 #sequence\_revision 20-Feb-1995 #text\_change 16-Jul-1999  
C/Accession: S14873  
R/Maegerl, H.J.; Hanke, M.; Schmeding, G.; Teuteberg, K.; Schulz-Knappe, P.; Forssmann, submitted to the EMBL Data Library, March 1991  
A/Reference number: S14872  
A/Accession: S14873  
A/Status: preliminary  
A/Molecule type: mRNA  
A/Residues: 1-151 <MAE>  
A/Cross-references: EMBL:X58563; NID:g1008; PIDN:CAA41443.1; PID:g1009  
C/Superfamily: natriuretic peptide A precursor

Query Match	51.5%;	Score 87;	DB 2;	Length 153;
Best Local Similarity	50.0%;	Pred. No. 4.9e-05;		
Matches	15;	Conservative	6;	Mismatches 9;
				Indels 0;
				Gaps 0;

```
QY      1 SPKVVGGSGCFGRKMDRISSSSGLGCKVLK 30
      ::::|::|:|::|:|::|:|
Db     121 APRSLRRSSCFGGRMDRIGAQSGLGKNSFR 150
```

## RESULT 13

lebetin 2 isoform alpha - Vipera lebetina  
C/Species: Vipera lebetina  
C/Date: 11-Mar-1998 #sequence\_revision 17-Apr-1998 #text\_change 01-Dec-2000  
C/Accession: S71381, S71382, S71379  
R;Barboudne, R.; Mairrachi, N.; Mansuelle, P.; Krifi, M.; Fenouillet, E.; Rochat, H.; EL  
PEBS Lett. 392, 6-10, 1996  
A/Title: Novel anti-platelet aggregation polypeptides from Vipera lebetina venom: isolat  
A/Reference number: S71379; MUID:96354866; PMID:8769304  
A/Accession: S71381  
A/Molecule type: protein  
A/Residues: 1-38 <BAR>  
A/Experimental source: venom  
A/Accession: S71382  
A/Molecule type: protein  
A/Residues: 2-38 <BA2>  
A/Experimental source: venom  
A/Accession: S71379  
A/Molecule type: protein  
A/Residues: 1-13 <BA3>  
A/Experimental source: venom  
C/Keywords: anticoagulant; venom  
F;14-30/Disulfide bonds: #status predicted

Query Match:	50.9%;	Score 86;	DB 2;	Length 38;
Best Local Similarity	64.0%;	Pred. No. 1.8e-05;		
Matches 16;	Conservative 2;	Mismatches 7;	Indels 0;	Gaps 0;

```

QY      2 PKMVGSGCFGRKMDRISSSGTGC 26
      ||| : ||| | : ||| | |||
Db      6 PKGPPNGCFGHIKIDRIGSHSGTGC 30

```

RESULT 14  
AWRB

atrial natriuretic peptide precursor - rabbit  
N/Alternate names: ANP; atrial natriuretic polypeptide  
C/Species: *Oryctolagus cuniculus* (domestic rabbit)  
C/Date: 31-Mar-1988 #sequence\_revision 31-Mar-1988 #text\_change 18-Jun-1999  
C/Accession: B25302  
R/Oikawa, S.; Imai, M.; Inuzuka, C.; Tawaragi, Y.; Nakazato, H.; Matsuo, H.  
Biochem. Biophys. Res. Commun. 132, 892-899, 1985  
A/Title: Structure of dog and rabbit precursors of atrial natriuretic polypeptides deduced  
A/Reference number: A90119; MUID:86076957; PMID:2934062  
A/Accession: B25302  
A/Molecule type: mRNA  
A/Residues: 1-153 <OIK>  
A/Cross-references: GB:M12046; NID:g164770; PIDN:AAA31162.1; PID:g164771  
C/Superfamily: natriuretic peptide A precursor  
C/Keywords: atrium; diuretic; hormone; natriuretic; osmoregulation

F;1-25/Domain: signal sequence #status predicted <SIG>  
F;26-151/Product: gamma atrial natriuretic factor #status predicted <ANF>  
F;124-151/Product: alpha atrial natriuretic peptide #status predicted <ANP>  
F;130-146/Disulfide bonds: #status predicted

Query Match	49.1%;	Score 83;	DB 1;	Length 153;
Best Local Similarity	46.7%;	Pred. No. 0.00018;		
Matches 14;	Conservative 7;	Mismatches 9;	Indels 0;	Gaps 0;

```

QY      1 SPKRVGSGCFGRKMDRISSSSGLGKTVLR 30
        : : : : : : : : : : : : : : : :
Db     121 APRSLRRSSCTFGGRIDRIGAGSGLGCMNFR 150

```

## RESULT 15

brain natriuretic factor precursor - rat  
N;Alternate names: brain natriuretic peptide; cardiac natriuretic factor; iso-atrial n  
N;Contains: brain natriuretic factor BNP-45  
C;Species: Rattus norvegicus (Norway rat)  
C;Date: 10-Sep-1999 #sequence revision 10-Sep-1999 #text change 10-Sep-1999  
C;Accession: A30162; A35691; A54893; A32918; A32919; A33253; A60755; I57704; A33252  
R;Kojima, M.; Minamino, N.; Kangawa, K.; Matsuo, H.  
Biochem. Biophys. Res. Commun. 159, 1420-1426, 1989  
A;Title: Cloning and sequence analysis of cDNA encoding a precursor for rat brain natr  
A;Reference number: A30162; MUID:89193742; PMID:2522776

```

A;Molecule type: mRNA

```

A;Cross-references: GB:M25297; NID:q602483; PIDN:AAA57269.1; PID:q602484

R;ROY, R.N.; FLYNN, T.G.

A/Title: Organization of the gene for iso-rANP, a rat B

A:Reference Number:  
A:Accession: A35691

A:Molecule type: DNA  
A:Positives: 1-14 /V/ 16-121 <POY>

A;Cross-references: GB:M60731; NID:g204985; PIDN:AAA41456.1; PID:g2049886

R;Thnerauf, D.J.; Hanford, D.S.; Glembofski, C.C.

A:Title: Regulation of rat brain natriuretic peptide tr

A;Reference number: A54893

A: Molecule type: DNA  
A: Position: 1-19 <T>TTT

A/Cross-references: GB:U02972; NID:g458021; PIDN:AAA21648.1; PID:g458022

Biochem. Biophys. Res. Commun. 163, 226-232, 1989

A/Reference number: A32918; MUID:89374230; PMID:26732366

A:Accession: A32918  
A:Molecule type: protein

A;Residues: 27-121 <ABU>  
 Ryabova:ch V. Nakao K. Itch H. Hosoda K. Saito Y. Yamada, T. Mukoyama, M.

Imura, H.

A; Title: Isolation and sequence determination of rat cardiac natriuretic peptide

A/Accession: A32919

A: molecule type: protein  
A: Residues: 77-121 <KAM>

R; Flynn, T. G.; Brar, A.; Tremblay, L.; Sarda, I.; Lyons, C.; Jennings, D. B.  
 Dischem Dischem 151 830-837 1999

A; Title: Isolation and characterization of iso-RANP, a

A;Accession: A33253

A:Residues: 77-119, 'Q', 121 <FLY>  
A:Molecule type: protein

R.; Nakao, K.; Itoh, H.; Kambayashi, Y.; Hosoda, K.; Salto, Y.; Yamada, T.; Mukoyama, M. Hybertension 15: 774-778, 1990

A; Title: Rat brain natriuretic peptide. Isolation from rat heart and tissue distribution.  
Accession number: A60735; MIMD:90277148; PMID:2351430

A:Accession: A60735  
A:Molecule type: protein  
A:Residues: 77-121 <NAK>  
R:Dagnino, L.; Drouin, J.; Nemer, M.  
Mol. Endocrinol. 5, 1292-1300, 1991  
A:Title: Differential expression of natriuretic peptide genes in cardiac and extracardiac  
A:Reference number: 157704; MUID:92123224; PMID:1837590  
A:Accession: 157704  
A:Status: preliminary; translated from GB/EMBL/DBJ  
A:Molecule type: DNA  
A:Residues: 1-121 <RES>  
A:Cross-references: GB:M60266; NID:G204983; PIDN:AAA41455.1; PID:G204984  
C:Genetics:  
A:Introns: 42/3; 117/1  
C:Superfamily: natriuretic peptide A precursor  
C:Keywords: cardiac muscle; heart  
F:1-26/Domain: signal sequence #status predicted <SIG>  
F:27-121/Product: brain natriuretic factor #status experimental <MAT1>  
F:77-121/Product: brain natriuretic factor BNP-45 #status experimental <MAT2>

Query Match 48.5%; Score 82; DB 1; Length 121;  
Best Local Similarity 57.1%; Pred. No. 0.0002;  
Matches 16; Conservative 3; Mismatches 9; Indels 0; Gaps 0;

QY 3 KMWGSGCFGRKMDRISSSGLGCKVLR 30  
Db 92 KMAHSSCFGQKIDRIGAVSRRLGCDGLR 119

Search completed: March 29, 2004, 14:43:16  
Job time : 22 secs



GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: March 29, 2004, 14:35:24 ; Search time 11 Seconds  
(without alignments)  
151.477 Million cell updates/sec

Title: US-09-902-517-49  
Perfect score: 169  
Sequence: 1 SPKMWGSGCFGRKMDRISSSGLGCKVLRH 32

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 141681 seqs, 52070155 residues  
Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : SwissProt\_42:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	length	DB	ID	Description
1	169	100.0	134	1	ANFB_HUMAN	P16860 homo sapien
2	124	73.4	103	1	ANFB_BOVIN	P13204 bos taurus
3	124	73.4	129	1	ANFB_SHEEP	O46541 ovis aries
4	123	72.8	140	1	ANFB_CANFA	P16859 canis famil
5	122	72.2	131	1	ANFB_PIG	P07634 sus scrofa
6	101	59.8	140	1	ANFB_CHICK	P18908 gallus gall
7	87	51.5	149	1	ANFB_CANFA	P07499 canis famil
8	87	51.5	150	1	ANFB_PIG	P24259 sus scrofa
9	87	51.5	152	1	ANFB_BOVIN	P07501 bos taurus
10	87	51.5	152	1	ANFB_SHEEP	O46540 ovis aries
11	87	51.5	153	1	ANFB_HORSE	P27104 equus cabal
12	87	51.5	153	1	ANFB_HUMAN	P01160 homo sapien
13	83	49.1	153	1	ANFB_RABIT	P07500 oryctolagus
14	82	48.5	121	1	ANFB_RAT	P13205 rattus norv
15	82	48.5	152	1	ANFB_MOUSE	P05125 mus musculu
16	82	48.5	152	1	ANFB_RAT	P01161 rattus norv
17	81	47.9	128	1	ANFB_CAVPO	P27596 cavia porce
18	79	46.7	126	1	ANFB_BOVIN	P55206 bos taurus
19	79	46.7	126	1	ANFB_HUMAN	P23582 homo sapien
20	79	46.7	126	1	ANFB_MOUSE	O61839 mus musculu
21	79	46.7	126	1	ANFB_PIG	P18104 sus scrofa
22	79	46.7	126	1	ANFB_RAT	P55207 rattus norv
23	79	46.7	126	1	ANFB_SHEEP	P56283 ovis aries
24	78	46.2	39	1	VNOC_OXYMI	P83230 oxyuranus m
25	78	46.2	39	1	VNOC_OXYSA	P83231 oxyuranus s
26	78	46.2	131	1	ANFC_ANGJA	P18145 anguilla ja
27	77	45.6	36	1	ANFB_ANGJA	P22642 anguilla ja
28	77	45.6	121	1	ANFB_MOUSE	P40753 mus musculu
29	76	45.0	118	1	ANFB_RANCA	P40756 rana catesb
30	75	44.4	35	1	VNOB_OXYMI	P83227 oxyuranus m
31	75	44.4	35	1	VNOB_OXYSA	P83229 oxyuranus s
32	75	44.4	35	1	VNOB_OXYSC	P83228 oxyuranus s
33	75	44.4	115	1	ANFC_SCYCA	P23259 scylliorhnu

34	75	44.4	115	1	ANFC_TRISC	P55208 triakis scy
35	74	43.8	27	1	ANFB_ANGJA	P18144 anguilla ja
36	74	43.8	129	1	ANFC_RANCA	P20968 rana catesb
37	73	43.2	35	1	VNOA_OXYMI	P83224 oxyuranus m
38	73	43.2	35	1	VNOA_OXYSA	P83226 oxyuranus s
39	73	43.2	35	1	VNOA_OXYSC	P83225 oxyuranus s
40	72	42.6	22	1	ANFC_CHICK	P21805 gallus gall
41	72	42.6	30	1	ANFB_RANRI	P09196 rana ridibu
42	72	42.6	145	1	ANFB_RANCA	P18909 rana catesb
43	70	41.4	135	1	ANFC_SQUAC	P41319 squallus aca
44	69	40.8	38	1	DNP_DENAN	P28374 dendrocaapis
45	53.5	31.7	588	1	CO8B_PAROL	Q9pww7 paraliichthy

ALIGNMENTS

RESULT 1	ANFB_HUMAN	STANDARD;	PRT;	134 AA.
ID	ANFB_HUMAN			
AC	P16860;			
DT	01-AUG-1990 (Rel. 15, Created)			
DT	01-AUG-1990 (Rel. 15, Last sequence update)			
DT	15-MAR-2004 (Rel. 43, Last annotation update)			
DE	Brain natriuretic peptide precursor (BNP).			
GN	NPPB.			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.			
OX	NCBI_TaxID=9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=90088474; PubMed=2597152;			
RA	Seilhamer J.J., Arfsten A., Miller J.A., Lundquist P.,			
RA	Scarborough R.M., Lewicki J.A., Porter J.G.,			
RT	"Human and canine gene homologs of porcine brain natriuretic			
RT	peptide.";			
RL	Biochem. Biophys. Res. Commun. 165:650-658(1989).			
RN	[2]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=89193743; PubMed=2522777;			
RA	Sudoh T., Maekawa K., Kojima M., Minamino N., Kangawa K., Matsuo H.;			
RT	"Cloning and sequence analysis of cDNA encoding a precursor for human			
RT	brain natriuretic peptide.";			
RL	Biochem. Biophys. Res. Commun. 159:1427-1434(1989).			
RP	[3]			
RP	SEQUENCE FROM N.A.			
RA	Errington H.;			
RL	Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.			
RN	[4]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE=Pancreas, and Spleen;			
RX	MEDLINE=22388257; PubMed=12477932;			
RA	Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,			
RA	Klausner R.D., Collins F.S., Wagner L., Sherman C.M., Schuler G.D.,			
RA	Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,			
RA	Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,			
RA	Datchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,			
RA	Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,			
RA	Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,			
RA	Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullany S.U.,			
RA	Bosak S.A., McGowan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,			
RA	Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,			
RA	Vallalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,			
RA	Fahy J., Helton E., Kettelman M., Madan A., Rodriguez S., Sanchez A.,			
RA	Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,			
RA	Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,			
RA	Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,			
RA	Butterfield Y.S.N., Krzywicki M.I., Skalska U., Smailus D.E.,			
RA	Schmerch A., Schein J.E., Jones S.J.M., Marra M.A.;			
RT	"Generation and initial analysis of more than 15,000 full-length			
RT	human and mouse cDNA sequences.";			
RL	Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).			



RN [5]  
 RP SEQUENCE OF 27-58 AND 103-134.  
 RX MEDLINE=90211249; PubMed=2138890;  
 RA Hino J., Tateyaa H., Minamino N., Kangawa K., Matsuo H.;  
 RT "Isolation and identification of human brain natriuretic peptides in  
 RT cardiac atrium."  
 RL Biochem. Biophys. Res. Commun. 167:693-700(1990).  
 RN [6]  
 RP SEQUENCE OF 103-134.  
 RX MEDLINE=90092577; PubMed=2136732;  
 RA Kambayashi Y., Nakao K., Mukoyama M., Saito Y., Ogawa Y., Shiono S.,  
 RA Inouye K., Yoshida N., Imura H.;  
 RT "Isolation and sequence determination of human brain natriuretic  
 RT peptide in human atrium."  
 RL FEBS Lett. 259:341-345(1990).  
 CC -1- FUNCTION: Acts as a cardiac hormone with a variety of biological  
 CC actions including natriuresis, diuresis, vasorelaxation, and  
 CC inhibition of renin and aldosterone secretion. It is thought to  
 CC play a key role in cardiovascular homeostasis. Helps restore the  
 CC body's salt and water balance. Improves heart function.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- TISSUE SPECIFICITY: Brain and also in atria, but at much lower  
 CC levels than ANP.  
 CC -1- PHARMACEUTICAL: Available under the name Nesiritide (Scios). Used  
 CC for the treatment of heart failure.  
 CC -1- SIMILARITY: Belongs to the natriuretic peptide family.  
 CC -----  
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 CC -----  
 CC EMBL; M31776; AAA35603.1; -  
 DR EMBL; M25296; AAA36355.1; -  
 DR EMBL; AL021155; CAA15956.1; -  
 DR EMBL; BC025785; AAH25785.1; -  
 DR PIR; A36736; AMHUB.  
 DR Genew; HGNC:7940; NPPB.  
 DR MIM; 600295; -  
 DR InterPro; IPR002408; Br\_natriureticpep.  
 DR InterPro; IPR000663; Natr\_peptide.  
 DR Pfam; PF00212; ANP; 1.  
 DR PRINTS; PR00710; NATPEPTIDES.  
 DR ProDom; PD006651; Br\_natriureticpep; 1.  
 DR SMART; SM00183; NAT\_PEP; 1.  
 DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
 KM Vasoactive; Signal; Polymorphism.  
 FT SIGNAL 1 26  
 FT CHAIN 27 134 GAMMA-BRAIN NATRIURETIC PEPTIDE.  
 FT PEPTIDE 103 134 BRAIN NATRIURETIC PEPTIDE (BNP-32).  
 FT DISULFID 112 128 BY SIMILARITY.  
 FT VARIANT 25 25 R->L (in dbSNP:5227).  
 FT VARIANT 47 47 /FTID=VAR\_014580.  
 FT VARIANT 93 93 R->H (in dbSNP:5229).  
 FT VARIANT 93 93 /FTID=VAR\_014581.  
 FT VARIANT 93 93 M->L (in dbSNP:5230).  
 FT VARIANT 93 93 /FTID=VAR\_014582.  
 SQ SEQUENCE 134 AA; 14726 MW; DC884D9408462146 CRC64;

RESULT 2  
 ANFB\_BOVIN

ID ANFB\_BOVIN STANDARD; PRT; 103 AA.  
 AC P13204;  
 DT 01-JAN-1990 (Rel. 13, Created)  
 DT 01-DEC-1992 (Rel. 24, Last sequence update)  
 DT 15-MAR-2004 (Rel. 43, Last annotation update)  
 DE Brain natriuretic peptide precursor (BNP) (Aldosterone secretion  
 DE inhibitory factor) (ASIF).  
 GN NPPB.  
 OS Bos taurus (Bovine).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;  
 OC Bovidae; Bovinae; Bos.  
 OX NCBI\_TaxID=9913;  
 RN [1]  
 RP SEQUENCE.  
 RX MEDLINE=90114187; PubMed=2532709;  
 RA Nguyen T.T., Lazure C., Babinski K., Chretien M., de Lean A., Ong H.;  
 RT "Purification and primary structure of pro-aldosterone secretion  
 RT inhibitory factor from bovine adrenal chromaffin cells."  
 RL Mol. Endocrinol. 3:1823-1829(1989).  
 RN [2]  
 RP SEQUENCE OF 69-103.  
 RX MEDLINE=89136947; PubMed=2537187;  
 RA Nguyen T.T., Lazure C., Babinski K., Chretien M., Ong H., de Lean A.;  
 RT "Aldosterone secretion inhibitory factor: a novel neuropeptide in  
 RT bovine chromaffin cells."  
 RL Endocrinology 124:1591-1593(1989).  
 CC -1- FUNCTION: Acts as a cardiac hormone with a variety of biological  
 CC actions including natriuresis, diuresis, vasorelaxation, and  
 CC inhibition of renin and aldosterone secretion. It is thought to  
 CC play a key role in cardiovascular homeostasis. Helps restore the  
 CC body's salt and water balance. Improves heart function.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- TISSUE SPECIFICITY: Brain and also in atria, but at much lower  
 CC levels than ANP.  
 CC -1- SIMILARITY: Belongs to the natriuretic peptide family.  
 CC PIR; A41403; A41403.  
 DR InterPro; IPR002408; Br\_natriureticpep.  
 DR InterPro; IPR000663; Natr\_peptide.  
 DR Pfam; PF00212; ANP; 1.  
 DR PRINTS; PR00710; NATPEPTIDES.  
 DR ProDom; PD006651; Br\_natriureticpep; 1.  
 DR SMART; SM00183; NAT\_PEP; 1.  
 DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
 KM Vasoactive.  
 FT CHAIN 1 103 GAMMA-BRAIN NATRIURETIC PEPTIDE.  
 FT PEPTIDE 69 103 ALDOSTERONE SECRETION INHIBITORY FACTOR.  
 FT DISULFID 78 103 BRAIN NATRIURETIC PEPTIDE (BNP-26).  
 SQ SEQUENCE 103 AA; 11249 MW; 40209204AEE3851D CRC64;

Query Match 73.4%; Score 124; DB 1; Length 103;  
 Best Local Similarity 71.0%; Pred. No. 1.5e-11;  
 Matches 22; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

OY 2 PKMVQSGCGFGRKMDRISSSGLGCKVLRH 32  
 DB 73 PKMRDSCGCFGRRLDRIGSLGCKVLRH 103  
 ANFB\_SHEEP STANDARD; PRT; 129 AA.  
 ID ANFB\_SHEEP  
 AC O46541;  
 DT 28-FEB-2003 (Rel. 41, Created)  
 DT 28-FEB-2003 (Rel. 41, Last sequence update)  
 DT 10-OCT-2003 (Rel. 42, Last annotation update)  
 DE Brain natriuretic peptide precursor (BNP).  
 GN NPPB.  
 OS Ovis aries (Sheep).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;  
 OC Bovidae; Caprinae; Ovis.

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OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=99236261; PubMed=10219521;
RA Aitken G.D., Raizis A.M., Yandle T.G., George P.M., Espiner E.A.,
RA Cameron V.A.;
RT "The characterization of ovine genes for atrial, brain, and C-type
RT natriuretic peptides.";
RL Domest. Anim. Endocrinol. 16:115-121(1999).
CC -!- FUNCTION: Acts as a cardiac hormone with a variety of biological
CC actions including natriuresis, diuresis, vasorelaxation, and
CC inhibition of renin and aldosterone secretion. It is thought to
CC play a key role in cardiovascular homeostasis. Helps restore the
CC body's salt and water balance. Improves heart function.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the natriuretic peptide family.
CC -----
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CC -----
DR EMBL; AF037466; AAB92565.1; -.
DR InterPro; IPR002408; Br_natriurtcep.
DR InterPro; IPR000663; Natri_peptide.
DR Pfam; PF00212; ANP; 1.
DR PRINTS; PRO0710; NATPEPTIDES.
DR PRODOM; PD006651; Br_natriurtcep; 1.
DR SMART; SM00183; NAT_PEP; 1.
DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
KW Vasoactive; Signal.
FT SIGNAL 1 26 POTENTIAL.
FT CHAIN 27 129 GAMMA-BRAIN NATRIURETIC PEPTIDE.
FT PEPTIDE 101 129 BRAIN NATRIURETIC PEPTIDE 29 (BY
FT SIMILARITY).
FT PEPTIDE 104 129 BRAIN NATRIURETIC PEPTIDE 26 (BY
FT SIMILARITY).
FT DISULFID 107 123 BY SIMILARITY.
SQ SEQUENCE 129 AA; 14118 MW; 13D4DF91D32A28EF CRC64;

Query Match 73.4%; Score 124; DB 1; Length 129;
Best Local Similarity 71.0%; Pred. No. 1.9e-11;
Matches 22; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

OY 2 PKMVQSGCGFGRKMDRISSSSGLGCKVLRH 32
Db 99 PKMVRDSCGCGRRRLDRIGSLGCGNVLRKY 129

RESULT 4
ANFB CANFA STANDARD; PRT; 140 AA.
AC P16859;
DT 01-AUG-1990 (Rel. 15, Created)
DT 01-AUG-1990 (Rel. 15, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Brain natriuretic peptide precursor (BNP).
GN NPPB.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=9008474; PubMed=2597152;
RA Seilhamer J.J., Arfsten A., Miller J.A., Lundquist P.,
RA Scarborough R.M., Lewicki J.A., Porter J.G.;
RT "Human and canine gene homologs of porcine brain natriuretic
RT peptide.";
RL Biochem. Biophys. Res. Commun. 165:650-658(1989).

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CC -!- FUNCTION: Acts as a cardiac hormone with a variety of biological
CC actions including natriuresis, diuresis, vasorelaxation, and
CC inhibition of renin and aldosterone secretion. It is thought to
CC play a key role in cardiovascular homeostasis. Helps restore the
CC body's salt and water balance. Improves heart function.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- TISSUE SPECIFICITY: Brain and also in atria, but at much lower
CC levels than ANP.
CC -!- SIMILARITY: Belongs to the natriuretic peptide family.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; M31777; AAA30832.1; -.
DR PIR; B36736; B36736.
DR InterPro; IPR002408; Br_natriurtcep.
DR InterPro; IPR000663; Natri_peptide.
DR Pfam; PF00212; ANP; 1.
DR PRINTS; PRO0710; NATPEPTIDES.
DR PRODOM; PD006651; Br_natriurtcep; 1.
DR SMART; SM00183; NAT_PEP; 1.
DR PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
KW Vasoactive; Signal.
FT SIGNAL 1 26 POTENTIAL.
FT CHAIN 27 140 GAMMA-BRAIN NATRIURETIC PEPTIDE.
FT PEPTIDE 107 140 BRAIN NATRIURETIC PEPTIDE (BNP-34).
FT PEPTIDE 112 140 BRAIN NATRIURETIC PEPTIDE (BNP-29).
FT DISULFID 118 134 BY SIMILARITY.
SQ SEQUENCE 140 AA; 14966 MW; 6128B6F4D0FD49D9 CRC64;

Query Match 72.8%; Score 123; DB 1; Length 140;
Best Local Similarity 68.8%; Pred. No. 2.8e-11;
Matches 22; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

OY 1 SPKVVQSGCGFGRKMDRISSSSGLGCKVLRH 32
Db 109 SPKVVHSGCGFGRRLDRIGSLGCGNVLRKY 140

RESULT 5
ANFB FIG STANDARD; PRT; 131 AA.
AC P07634;
DT 01-APR-1988 (Rel. 07, Created)
DT 01-MAR-1989 (Rel. 10, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Brain natriuretic peptide precursor (BNP).
GN NPPB.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX NCBI_TaxID=9823;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89061744; PubMed=3196348;
RA Maekawa K., Sudoh T., Furusawa M., Miramino N., Kangawa K., Okubo H.,
RA Nakanishi S., Matsuo H.;
RT "Cloning and sequence analysis of cDNA encoding a precursor for
RT porcine brain natriuretic peptide.";
RL Biochem. Biophys. Res. Commun. 157:410-416(1988).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=89214071; PubMed=2708334;
RA Porter J.G., Arfsten A., Palisi T., Scarborough R.M.,
RA Lewicki J.A., Seilhamer J.J.;
RT "Cloning of a cDNA encoding porcine brain natriuretic peptide.";
RL J. Biol. Chem. 264:6689-6692(1989).
RN [3]

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RP SEQUENCE OF 26-131.  
RX MEDLINE=89061743; PubMed=3196347;  
RA Minamino N., Kangawa K., Matsuo H.;  
RT "Isolation and identification of a high molecular weight brain  
RL natriuretic peptide in porcine cardiac atrium."  
Biochem. Biophys. Res. Commun. 157:402-409(1988).  
[4]  
RP SEQUENCE OF 100-131.  
RX MEDLINE=88339957; PubMed=3421965;  
RA Sudoh T., Minamino N., Kangawa K., Matsuo H.;  
RT "Brain natriuretic peptide-32: N-terminal six amino acid extended  
RL form of brain natriuretic peptide identified in porcine brain."  
Biochem. Biophys. Res. Commun. 155:726-732(1988).  
[5]  
RP SEQUENCE OF 106-131.  
RX MEDLINE=88156915; PubMed=2364562;  
RA Sudoh T., Kangawa K., Minamino N., Matsuo H.;  
RT "A new natriuretic peptide in porcine brain."  
RL Nature 332:78-81(1988).  
[6]  
RP STRUCTURE BY NMR OF BNP-26.  
RX MEDLINE=91031435; PubMed=2146114;  
RA Inooka H., Kikuchi T., Endo S., Ishibashi Y., Wakimasu M., Mizuta E.;  
RT "Conformation in solution of porcine brain natriuretic peptide  
RL determined by combined use of nuclear magnetic resonance and distance  
RT geometry."  
RL Eur. J. Biochem. 193:127-134(1990).  
[7]  
RP STRUCTURE BY NMR OF BNP-26.  
RX MEDLINE=92007873; PubMed=1915362;  
RA Craik D., Munro S., Nielsen K., Shehan P., Tregear G., Wade J.;  
RT "The conformation of porcine-brain natriuretic peptide by two-  
RL dimensional NMR spectroscopy."  
Bur. J. Biochem. 201:183-191(1991).  
-1- FUNCTION: Acts as a cardiac hormone with a variety of biological  
CC actions, including natriuresis, diuresis, vasorelaxation, and  
CC inhibition of renin and aldosterone secretion. It is thought to  
CC play a key role in cardiovascular homeostasis. Helps restore the  
CC body's salt and water balance. Improves heart function.  
CC -1- SUBCELLULAR LOCATION: Secreted.  
CC -1- TISSUE SPECIFICITY: Brain and also in atria, but at much lower  
CC levels than ANP.  
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.  
CC -----  
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CC -----  
DR EMBL; M23596; AAB59258.1; -  
DR EMBL; M25547; AAA31007.1; -  
DR PIR; A31676; A31676.  
DR PIR; A33873; A33873.  
DR InterPro; IPR002408; Br\_natriurtcep.  
DR InterPro; IPR000663; Natri\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PR00710; NATPEPTIDES.  
DR PRODOM; PD006651; Br\_natriurtcep; 1.  
DR SMART; SM00183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
KW Vasoactive; Signal.  
FT SIGNAL 1 25  
FT CHAIN 26 131 GAMMA-BRAIN NATRIURETIC PEPTIDE.  
FT PEPTIDE 100 131 BRAIN NATRIURETIC PEPTIDE (BNP-32).  
FT PEPTIDE 106 131 BRAIN NATRIURETIC PEPTIDE (BNP-26).  
FT DISULFID 109 125  
FT VARIANT 26 26 H -> Y (IN A CLONE).  
SQ SEQUENCE 131 AA; 14512 MW; CCGF6E6E4A50C18A CRC64;

Query Match

72.2%; Score 122; DB 1; Length 131;

Best Local Similarity 68.8%; Pred. No. 3.7e-11;  
Matches 22; Conservative 5; Mismatches 5; Indels 0; Gaps 0;  
Qy 1 SPKWQSGGCGFRKMDRISSSSGLGCKYLRRH 32  
Db 100 SPKTRDSGCGFRIDRIGSLGICNVLRYY 131

RESULT 6  
ANF\_CHICK STANDARD; PRT; 140 AA.  
AC P18908;  
DT 01-NOV-1990 (Rel. 16, Created)  
DT 01-MAR-1992 (Rel. 21, Last sequence update)  
DT 10-OCT-2003 (Rel. 42, Last annotation update)  
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)  
DE (ANF) (Prepronatriodilatin).  
GN NPPA.  
OS Gallus gallus (Chicken).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
OC Gallus.  
OC NCBI\_TaxID=9031;  
CX [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=91192169; PubMed=1826483;  
RA Akizuki N., Kangawa K., Minamino N., Matsuo H.;  
RT "Cloning and sequence analysis of complementary DNA encoding a  
RT precursor for chicken natriuretic peptide."  
RL FEBS Lett. 280:357-362(1991).  
[2]  
RP SEQUENCE OF 112-140.  
RC TISSUE=Heart;  
RX MEDLINE=89025805; PubMed=2972278;  
RA Miyata A., Minamino N., Kangawa K., Matsuo H.;  
RT "Identification of a 29-amino acid natriuretic peptide in chicken  
RT heart."  
RL Biochem. Biophys. Res. Commun. 155:1330-1337(1988).  
CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive  
CC substance synthesized in mammalian atria and is thought to play a  
CC key role in cardiovascular homeostasis. Has a cGMP-stimulating  
CC activity.  
CC -1- SUBCELLULAR LOCATION: Secreted.  
CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of  
CC atriopeptins.  
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.  
CC -----  
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CC -----  
DR EMBL; X57702; CAA40879.1; -  
DR PIR; S14320; S14320.  
DR InterPro; IPR002408; Br\_natriurtcep.  
DR InterPro; IPR000663; Natri\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PR00710; NATPEPTIDES.  
DR PRODOM; PD006651; Br\_natriurtcep; 1.  
DR SMART; SM00183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
KW Vasoactive; Signal.  
FT SIGNAL 1 24 POTENTIAL.  
FT PROPEP 25 110  
FT PEPTIDE 112 140 ATRIAL NATRIURETIC FACTOR.  
FT DISULFID 118 134  
SQ SEQUENCE 140 AA; 15714 MW; 67FEBFE094E71F40 CRC64;

Query Match

59.8%; Score 101; DB 1; Length 140;  
Best Local Similarity 54.8%; Pred. No. 5.5e-08;

Matches 17; Conservative 8; Mismatches 6; Indels 0; Gaps 0;

OY 2 PKMWGSGCGFRKMDRISSSSGLGCKVLRH 32  
Db 110 PMWRDSCGFRGRIDRIGSLGSGMGNRSRN 140

## RESULT 7

ANF\_CANFA STANDARD; PRT; 149 AA.  
AC P07499;  
DT 01-APR-1988 (Rel. 07, Created)  
DT 01-APR-1988 (Rel. 07, Last sequence update)  
DT 10-OCT-2003 (Rel. 42, Last annotation update)  
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)  
DE (ANF) (Prepronatriodilatin).  
GN NPPA.  
OS Canis familiaris (Dog).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.  
OX NCBI\_TaxID=9615;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=86076957; PubMed=2934062;  
RA Oikawa S., Imai M., Inuzuka C., Tawaragi Y., Nakazato H., Matsuo H.;  
RT "Structure of dog and rabbit precursors of atrial natriuretic  
RT polypeptides deduced from nucleotide sequence of cloned cDNA.";  
RL Biochem. Biophys. Res. Commun. 132:892-899(1985).  
CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive  
CC substance synthesized in mammalian atria and is thought to play a  
CC key role in cardiovascular homeostasis. Has a cGMP-stimulating  
CC activity.  
CC -1- SUBCELLULAR LOCATION: Secreted.  
CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of  
CC atriopeptins.  
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.

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CC -----  
CC EMBL; M12045; AAA30828.1; -.  
DR PIR; A25302; AWDG.  
DR InterPro; IPR000663; Natri\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PRO0710; NATPEPTIDES.  
DR SMART; SM00183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
KW Vasoactive; Signal.  
FT SIGNAL 1 23 POTENTIAL.  
FT PROPEP 24 120  
FT PEPTIDE 122 149 ATRIAL NATRIURETIC FACTOR.  
FT DISULFID 128 144  
SQ SEQUENCE 149 AA; 15819 MW; 9BA3A11C0B7557DE CRC64;

Query Match 51.5%; Score 87; DB 1; Length 149;  
Best Local Similarity 50.0%; Pred. No. 7.2e-06;  
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

OY 1 SPKWVQSGCGFRKMDRISSSSGLGCKVLR 30  
Db 119 APRSLRRSSCGFRMDRIGAQSGLGCSNFR 148

## RESULT 8

ANF\_PIG STANDARD; PRT; 150 AA.  
AC P24259;  
DT 01-MAR-1992 (Rel. 21, Created)

DT 01-MAR-1992 (Rel. 21, Last sequence update)  
DT 10-OCT-2003 (Rel. 42, Last annotation update)  
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)  
DE (ANF) (Prepronatriodilatin) [Contains: Cardiodilatin-related peptide  
DE (CDP)].  
GN NPPA.  
OS Sus scrofa (Pig).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.  
OX NCBI\_TaxID=9823;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Heart right atrium;  
RX MEDLINE=91067478; PubMed=2147477;  
RA Maegert H.J., Appelhans H., Gassen H.G., Forssmann W.-G.;  
RT "Nucleotide sequence of a porcine prepro atrial natriuretic peptide  
RT (ANP) cDNA.";  
RL Nucleic Acids Res. 18:6704-6704(1990).  
RN [2]  
RP SEQUENCE OF 25-150.  
RC TISSUE=Heart right atrium;  
RX MEDLINE=85124561; PubMed=6549270;  
RA Forssmann W.-G., Bitt C., Carlquist M., Christmann M., Finke R.,  
RA Henschen A., Hock D., Kirchheim H., Kreye V., Lottspeich F., Metz J.,  
RA Mult V., Reinecke M.;  
RT "The auricular myocytes of the heart constitute an endocrine  
RT organ. Characterization of a porcine cardiac peptide hormone,  
RT cardiodilatin-126.";  
RL Cell Tissue Res. 238:425-430(1984).  
CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive  
CC substance synthesized in mammalian atria and is thought to play a  
CC key role in cardiovascular homeostasis. Has a cGMP-stimulating  
CC activity.  
CC -1- SUBCELLULAR LOCATION: Secreted.  
CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of  
CC atriopeptins.  
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.

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CC -----  
CC EMBL; X54669; CAA38480.1; -.  
DR PIR; S13107; S13107.  
DR InterPro; IPR000663; Natri\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PRO0710; NATPEPTIDES.  
DR SMART; SM00183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
KW Vasoactive; Signal.  
FT SIGNAL 1 24  
FT PEPTIDE 25 54 CARDIODILATIN-RELATED PEPTIDE (CDP)  
FT PROPEP 55 121 (BY SIMILARITY).  
FT PEPTIDE 123 150 ATRIAL NATRIURETIC FACTOR.  
FT DISULFID 129 145 BY SIMILARITY.  
SQ SEQUENCE 150 AA; 16351 MW; 16CFE4FAF0BCE063 CRC64;

Query Match 51.5%; Score 87; DB 1; Length 150;  
Best Local Similarity 50.0%; Pred. No. 7.3e-06;  
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

OY 1 SPKWVQSGCGFRKMDRISSSSGLGCKVLR 30  
Db 120 APRSLRRSSCGFRMDRIGAQSGLGCSNFR 149

## RESULT 9

ANF\_BOVIN

ID ANF\_BOVIN STANDARD; PRT; 152 AA.  
AC P07501;  
DT 01-APR-1988 (Rel. 07, Created)  
DT 01-MAR-1989 (Rel. 10, Last sequence update)  
DT 10-OCT-2003 (Rel. 42, Last annotation update)  
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)  
DE (ANF) (Prepronatriodilatin).  
GN NPPA.  
OS Bos taurus (Bovine).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;  
OC Bovidae; Bovinae; Bos.  
OX NCBI\_TaxID=9913;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=86215205; PubMed=2939830;  
RA Vlasuk G.P., Miller J., Bencen G.H., Lewicki J.A.;  
RT "Structure and analysis of the bovine atrial natriuretic peptide  
precursor gene.";  
RL Biochem. Biophys. Res. Commun. 136:396-403(1986).  
RN [2]  
RP SEQUENCE OF 123-150.  
RX MEDLINE=86173941; PubMed=3007908;  
RA Ong H., McNicol N., Lazure C., Seidah N., Chretien M., Cantin M.,  
RA de Lean A.;  
RT "Purification and sequence determination of bovine atrial natriuretic  
factor.";  
RL Life Sci. 38:1309-1315(1986).  
CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive  
substance synthesized in mammalian atria and is thought to play a  
key role in cardiovascular homeostasis. Has a cGMP-stimulating  
activity.  
CC -1- SUBCELLULAR LOCATION: Secreted.  
CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of  
atriopeptins.  
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.  
-----  
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or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
-----  
CC  
DR EMBL; M13145; AAA30375.1; -.  
DR PIR; A90124; AMBO.  
DR InterPro; IPR002407; At\_natriurtcep.  
DR InterPro; IPR002408; Br\_natriurtcep.  
DR InterPro; IPR000663; Natr\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PR00710; NATPEPTIDES.  
DR ProDom; PD005107; At\_natriurtcep; 1.  
DR ProDom; PD006651; Br\_natriurtcep; 2.  
DR SMART; SM00183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
KW Vasoactive; Signal.  
FT SIGNAL 1 24 POTENTIAL.  
FT PROPEP 25 121  
FT PEPTIDE 123 150 ATRIAL NATRIURETIC FACTOR.  
FT DISULFID 129 145  
SQ SEQUENCE 152 AA; 16518 MW; 48D040FAE01DFD15 CRC64;  
  
Query Match 51.5%; Score 87; DB 1; Length 152;  
Best Local Similarity 50.0%; Pred. No. 7.4e-06;  
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

QY 1 SPKMVGSGCGFRKMDRISSSGIGCKVLR 30  
DB 120 APRSLRRSSCFGRMDRIGAQSGLGCSNFR 149

RESULT 10

ID ANF\_SHEEP STANDARD; PRT; 152 AA.  
AC P07501;  
DT 28-FEB-2003 (Rel. 41, Created)  
DT 28-FEB-2003 (Rel. 41, Last sequence update)  
DT 10-OCT-2003 (Rel. 42, Last annotation update)  
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)  
DE (ANF) (Prepronatriodilatin).  
GN NPPA.  
OS Ovis aries (Sheep).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;  
OC Bovidae; Caprinae; Ovis.  
OX NCBI\_TaxID=9940;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=99236261; PubMed=10219521;  
RA Aitken G.D., Raizis A.M., Yandle T.G., George P.M., Espiner E.A.,  
RA Cameron V.A.;  
RT "The characterization of ovine genes for atrial, brain, and C-type  
natriuretic peptides.";  
RL Domest. Anim. Endocrinol. 16:115-121(1999).  
CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive  
substance synthesized in mammalian atria and is thought to play a  
key role in cardiovascular homeostasis. Has a cGMP-stimulating  
activity.  
CC -1- SUBCELLULAR LOCATION: Secreted.  
CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of  
atriopeptins.  
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.  
-----  
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-----  
CC  
DR EMBL; AF037465; AAB92564.1; -.  
DR InterPro; IPR002407; At\_natriurtcep.  
DR InterPro; IPR002408; Br\_natriurtcep.  
DR InterPro; IPR000663; Natr\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PR00710; NATPEPTIDES.  
DR ProDom; PD005107; At\_natriurtcep; 1.  
DR ProDom; PD006651; Br\_natriurtcep; 2.  
DR SMART; SM00183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
KW Vasoactive; Signal.  
FT SIGNAL 1 24 POTENTIAL.  
FT PROPEP 25 121 BY SIMILARITY.  
FT PEPTIDE 123 150 ATRIAL NATRIURETIC FACTOR.  
FT DISULFID 129 145 BY SIMILARITY.  
SQ SEQUENCE 152 AA; 16368 MW; 5FA82C6E1325E7C6 CRC64;  
  
Query Match 51.5%; Score 87; DB 1; Length 152;  
Best Local Similarity 50.0%; Pred. No. 7.4e-06;  
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

QY 1 SPKMVGSGCGFRKMDRISSSGIGCKVLR 30  
DB 120 APRSLRRSSCFGRMDRIGAQSGLGCSNFR 149  
  
RESULT 11  
ID ANF\_HORSE STANDARD; PRT; 153 AA.  
AC P27104;  
DT 01-AUG-1992 (Rel. 23, Created)  
DT 01-AUG-1992 (Rel. 23, Last sequence update)  
DT 10-OCT-2003 (Rel. 42, Last annotation update)  
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)



DE (ANP) (Prepronatriodilatin).  
GN NPPA.  
OS Equus caballus (Horse).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.  
OX NCBI\_TaxID=9796;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC STRAIN=Adamiticus; TISSUE=Heart atrium;  
RA Maegert H.J., Richter R., Schmaeding G., Forsmann W.-G.;  
RL Submitted (MAR-1991) to the EMBL/GenBank/DBJ databases.  
CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive  
CC substance synthesized in mammalian atria and is thought to play a  
CC key role in cardiovascular homeostasis. Has a cGMP-stimulating  
CC activity.  
CC -1- SUBCELLULAR LOCATION: Secreted.  
CC -1- MISCELLANEOUS: A disulfide bond is required for full activity of  
CC atriopeptins.  
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.  
CC -----  
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CC or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
CC -----  
DR EMBL; X58563; CAA41443.1; -.  
DR PIR; S14873; S14873.  
DR InterPro; IPR000663; Natri\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PR00710; NATPEPTIDES.  
DR SMART; SM00183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
KW Vasoactive; Signal.  
FT SIGNAL 1 25 POTENTIAL.  
FT PROPEP 26 122  
FT PEPTIDE 124 151 ATRIAL NATRIURETIC FACTOR.  
FT DISULFID 130 146 BY SIMILARITY.  
SQ SEQUENCE 153 AA; 16825 MW; AFC19471DF564BD7 CRC64;  
  
Query Match 51.5%; Score 87; DB 1; Length 153;  
Best Local Similarity 50.0%; Pred. NO. 7.4e-06;  
Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;  
  
QY 1 SPMVQSGCGFRKMDRISSSSGLGCKVLR 30  
Db 121 APRSLRRSSCGFRMDRIGAQSGLGCSNFR 150  
  
RESULT 12  
ANF\_HUMAN STANDARD; PRT; 153 AA.  
ID P01160; O13766;  
DT 21-JUL-1986 (Rel. 01, Created)  
DT 13-AUG-1987 (Rel. 05, Last sequence update)  
DT 15-MAR-2004 (Rel. 43, Last annotation update)  
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)  
DE (ANP) (Prepronatriodilatin) [Contains: Cardiodilatin-related peptide  
DE (CDP)].  
GN NPPA OR PND.  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.  
OX NCBI\_TaxID=9606;  
RN [1]  
RP SEQUENCE OF 1-151 FROM N.A.  
RX MEDLINE=84219799; PubMed=6203042;  
RA Oikawa S., Imai M., Ueno A., Tanaka S., Noguchi T., Nakazato H.,  
RA Kangawa K., Fukuda A., Matsuo H.;  
RT "Cloning and sequence analysis of cDNA encoding a precursor for human  
RT atrial natriuretic polypeptide.";

RL Nature 309:724-726(1984).  
RN [2]  
RP SEQUENCE OF 1-151 FROM N.A.  
RX MEDLINE=84295577; PubMed=6547996;  
RA Nakayama K., Ohkubo H., Hirose T., Inayama S., Nakanishi S.;  
RT "mRNA sequence for human cardiodilatin-atrial natriuretic factor  
RT precursor and regulation of precursor mRNA in rat atria.";  
RL Nature 310:699-701(1984).  
RN [3]  
RP SEQUENCE OF 1-151 FROM N.A.  
RX MEDLINE=85061626; PubMed=6095118;  
RA Nemer M., Chamberland M., Sirois D., Argentin S., Drouin J.,  
RA Dixon R.A.F., Zivin R.A., Condra J.H.;  
RT "Gene structure of human cardiac hormone precursor,  
RT pronatriodilatin.";  
RL Nature 312:654-656(1984).  
RN [4]  
RP SEQUENCE OF 1-151 FROM N.A.  
RX MEDLINE=85061627; PubMed=6095119;  
RA Greenberg B.D., Bensen G.H., Seilhamer J.J., Lewicki J.A.,  
RA Fiddes J.C.;  
RT "Nucleotide sequence of the gene encoding human atrial natriuretic  
RT factor precursor.";  
RL Nature 312:656-658(1984).  
RN [5]  
RP SEQUENCE OF 1-151 FROM N.A.  
RX MEDLINE=85065766; PubMed=6542248;  
RA Seidman C.E., Bloch K.D., Zisfein J., Smit J., Haber E., Homcy C.,  
RA Duby A.D., Choi E., Graham R.M., Seidman J.G.;  
RT "Nucleotide sequences of the human and mouse atrial natriuretic  
RT factor genes.";  
RL Science 226:1206-1209(1984).  
RN [6]  
RP SEQUENCE OF 1-151 FROM N.A.  
RX MEDLINE=85206210; PubMed=3158606;  
RA Seidman C.E., Bloch K.D., Zisfein J., Smit J., Haber E., Homcy C.,  
RA Duby A.D., Choi E., Graham R.M., Seidman J.G.;  
RT "Molecular studies of the atrial natriuretic factor gene.";  
RL Hypertension 7:131-134(1985).  
RN [7]  
RP SEQUENCE OF 1-151 FROM N.A.  
RA Errington H.;  
RL Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.  
RN [8]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Prostate;  
RX MEDLINE=22388257; PubMed=12477932;  
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G., Schuler G.D.,  
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schat N.K.,  
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,  
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,  
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,  
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,  
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,  
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullaly S.J.,  
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,  
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,  
RA Villalón D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,  
RA Fahy J., Helton E., Kettelman M., Madan A., Rodriguez S., Sanchez A.,  
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,  
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,  
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,  
RA Butcherfield Y.S.N., Krzywinski M.I., Skalska U., Smalius D.E.,  
RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;  
RT "Generation and initial analysis of more than 15,000 full-length  
RT human and mouse cDNA sequences.";  
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).  
RN [9]  
RP SEQUENCE OF 118-153 FROM N.A.  
RX MEDLINE=85038509; PubMed=6238331;  
RA Zivin R.A., Condra J.H., Dixon R.A.F., Seidman N.G., Chretien M.,  
RA Nemer M., Chamberland M., Drouin J.;  
RT "Molecular cloning and characterization of DNA sequences encoding rat  
RT and human atrial natriuretic factors.";

Proc. Natl. Acad. Sci. U.S.A. 81:6325-6329(1984).  
 [10]  
 SEQUENCE OF 1-75 FROM N.A.  
 MEDLINE=85096983; PubMed=6097248;  
 RA Maki M., Parmentier M., Inagami T.;  
 RT "Cloning of genomic DNA for human atrial natriuretic factor.";  
 RL Biochem. Biophys. Res. Commun. 125:797-802(1984).  
 [11]  
 SEQUENCE OF 124-151.  
 MEDLINE=84128019; PubMed=6230082;  
 RA Kangawa K., Matsuo H.;  
 RT "Purification and complete amino acid sequence of alpha-human atrial  
 natriuretic polypeptide (alpha-hANP).";  
 RL Biochem. Biophys. Res. Commun. 118:131-139(1984).  
 [12]  
 STRUCTURE BY NMR OF 124-151 MUTANT SELECTIVE FOR NPR-C RECEPTOR.  
 MEDLINE=94318633; PubMed=8043577;  
 RA Fairbrother W.J., McDowell R.S., Cunningham B.C.;  
 RT "Solution conformation of an atrial natriuretic peptide variant  
 selective for the type A receptor.";  
 RL Biochemistry 33:897-8904(1994).  
 CC -I- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive  
 substance synthesized in mammalian atria and is thought to play a  
 key role in cardiovascular homeostasis. Has a cGMP-stimulating  
 activity.  
 CC -I- SUBCELLULAR LOCATION: Secreted.  
 CC -I- POLYMORPHISM: There are two different prepronatriodilatin alleles.  
 CC One codes for 2 Arg residues at the C-terminus that are cleaved to  
 form the mature peptide, while the other ends in a termination  
 codon immediately after the last codon of the mature peptide.  
 CC -I- SIMILARITY: Belongs to the natriuretic peptide family.  
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 -----  
 CC EMBL; X01470; CAA25699.1; -;  
 DR EMBL; X02558; CAA25699.1; JOINED.  
 DR EMBL; X02043; AAB59379.1; -;  
 DR EMBL; X01471; CAA25700.1; ALT\_SEQ.  
 DR EMBL; X02044; AAB51730.1; -;  
 DR EMBL; AL021155; CAA15955.1; -;  
 DR EMBL; BC005893; AAH05893.1; -;  
 DR EMBL; M30262; AAA35669.1; -;  
 DR EMBL; M54947; AAA35529.1; -;  
 DR EMBL; M54951; AAA35529.1; JOINED.  
 DR EMBL; K02399; AAA35528.1; -;  
 DR PIR; A22693; AMHU.  
 DR PDB; 1ANP; 07-APR-95.  
 DR Genew; HGNC:7939; NPPA.  
 DR MIM; 108780; -;  
 DR GO; GO:000576; C:extracellular; NAS.  
 DR GO; GO:0005179; F:hormone activity; NAS.  
 DR GO; GO:0008217; P:regulation of blood pressure; IDA.  
 DR InterPro; IPR002407; At\_natriurtcep.  
 DR InterPro; IPR002408; Br\_natriurtcep.  
 DR InterPro; IPR000663; Natri\_peptide.  
 DR Pfam; PF00212; ANP; 1.  
 DR PRINTS; PR00710; NATPEPTIDES.  
 DR ProDom; PD005107; At\_natriurtcep; 1.  
 DR ProDom; PD006651; Br\_natriurtcep; 2.  
 DR SMART; SM00183; NAT\_PEP; 1.  
 DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
 KW Vasoactive; Signal; Polymorphism; 3D-structure.  
 FT SIGNAL 1 25  
 FT PEPTIDE 26 55 CARDIODILATIN-RELATED PEPTIDE.  
 FT PROPEP 56 122  
 FT PEPTIDE 124 151 ATRIAL NATRIURETIC FACTOR.  
 FT DISULFID 130 146 BY SIMILARITY.

FT VARIANT 32 32 V -> M (in dbSNP:5063).  
 FT FT /FTID=VAR\_014579.  
 FT VARIANT 152 153 Missing (in isoform 2).  
 FT FT /FTID=VAR\_000594.  
 FT CONFLICT 65 65 E -> D (IN REF. 6).  
 SQ SEQUENCE 153 AA; 16708 MW; B38F03AA066A73EC CRC64;  
 Query Match 51.5%; Score 87; DB 1; Length 153;  
 Best Local Similarity 50.0%; Pred. No. 7.4e-06;  
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;  
 QY 1 SPKMYQSGGCFGRKMDRISSSSGIGCKVLR 30  
 Db 121 APRSLRRSSCFGRMDRIGAQSGIGCNSFR 150  
 RESULT 13  
 ANF\_RABIT STANDARD; PRT; 153 AA.  
 ID ANF\_RABIT  
 AC P07500;  
 DT 01-APR-1988 (Rel. 07, Created)  
 DT 01-APR-1988 (Rel. 07, Last sequence update)  
 DT 10-OCT-2003 (Rel. 42, Last annotation update)  
 DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide)  
 DE (ANF) (Prepronatriodilatin).  
 GN NPPA.  
 OS Oryctolagus cuniculus (Rabbit).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.  
 OX NCBI\_TaxID=9986;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=86076957; PubMed=2934062;  
 RA Oikawa S., Imai M., Inuzuka C., Tawaragi Y., Nakazato H., Matsuo H.;  
 RT "Structure of dog and rabbit precursors of atrial natriuretic  
 polypeptides deduced from nucleotide sequence of cloned cDNA.";  
 RL Biochem. Biophys. Res. Commun. 132:892-899(1985).  
 CC -I- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive  
 substance synthesized in mammalian atria and is thought to play a  
 key role in cardiovascular homeostasis. Has a cGMP-stimulating  
 activity.  
 CC -I- SUBCELLULAR LOCATION: Secreted.  
 CC -I- MISCELLANEOUS: A disulfide bond is required for full activity of  
 atriopeptins.  
 CC -I- SIMILARITY: Belongs to the natriuretic peptide family.  
 -----  
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 or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 -----  
 CC EMBL; M12046; AAA31162.1; -;  
 DR PIR; B25302; AMRB.  
 DR InterPro; IPR002407; At\_natriurtcep.  
 DR InterPro; IPR002408; Br\_natriurtcep.  
 DR InterPro; IPR000663; Natri\_peptide.  
 DR Pfam; PF00212; ANP; 1.  
 DR PRINTS; PR00710; NATPEPTIDES.  
 DR ProDom; PD005107; At\_natriurtcep; 1.  
 DR ProDom; PD006651; Br\_natriurtcep; 2.  
 DR SMART; SM00183; NAT\_PEP; 1.  
 DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
 KW Vasoactive; Signal.  
 FT SIGNAL 1 25 POTENTIAL.  
 FT PROPEP 26 122  
 FT PEPTIDE 124 151 ATRIAL NATRIURETIC FACTOR.  
 FT DISULFID 130 146  
 SQ SEQUENCE 153 AA; 16843 MW; 8214A56D073D3236 CRC64;  
 Query Match 49.1%; Score 83; DB 1; Length 153;



Best Local Similarity 46.7%; Pred. No. 2.9e-05;  
Matches 14; Conservative 7; Mismatches 9; Indels 0; Gaps 0;

QY 1 SPKVVQSGCGFRKMDRISSSSGLGCKVLR 30  
Db 121 APRSLRRSSCGFRIDRIGAVSRLGCDGLR 150

## RESULT 14

ANFB\_RAT STANDARD; PRT; 121 AA.  
ID ANFB\_RAT STANDARD; PRT; 121 AA.  
AC P13205;  
DT 01-JAN-1990 (Rel. 13, Created)  
DT 01-FEB-1991 (Rel. 17, Last sequence update)  
DT 15-MAR-2004 (Rel. 43, Last annotation update)  
DE Brain natriuretic peptide precursor (BNP) (5 kDa cardiac natriuretic peptide) (ISO-ANP).  
GN NPPB.  
OS Rattus norvegicus (Rat).  
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.  
OX NCBI\_TaxID=10116;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=89193742; PubMed=2522776;  
RA Kojima M., Minamino N., Kangawa K., Matsuo H.;  
RT "Cloning and sequence analysis of cDNA encoding a precursor for rat brain natriuretic peptide."  
RL Biochem. Biophys. Res. Commun. 159:1420-1426(1989).  
RN [2]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=90365739; PubMed=2144113;  
RA Roy R.N., Flynn T.G.;  
RT "Organization of the gene for iso-rANP, a rat B-type natriuretic peptide."  
RL Biochem. Biophys. Res. Commun. 171:416-423(1990).  
RN [3]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=92123224; PubMed=1837590;  
RA Dagnino L., Drouin J., Nemer M.;  
RT "Differential expression of natriuretic peptide genes in cardiac and extracardiac tissues."  
RL Mol. Endocrinol. 5:1292-1300(1991).  
RN [4]  
RP SEQUENCE OF 27-121.  
RX MEDLINE=89374230; PubMed=2673236;  
RA Abuyaya M., Hino J., Minamino N., Kangawa K., Matsuo H.;  
RT "Isolation and identification of rat brain natriuretic peptides in cardiac atrium."  
RL Biochem. Biophys. Res. Commun. 163:226-232(1989).  
RN [5]  
RP SEQUENCE OF 77-121.  
RC TISSUE=Heart;  
RX MEDLINE=89374231; PubMed=2528349;  
RA Kambayashi Y., Nakao K., Itoh H., Hosoda K., Saito Y., Yamada T., Mukoyama M., Arai H., Shirikami G., Suga S.-I., Ogawa Y., Jousgasaki M., Minamino N., Kangawa K., Matsuo H., Inouye K., Imura H.;  
RT "Isolation and sequence determination of rat cardiac natriuretic peptide."  
RL Biochem. Biophys. Res. Commun. 163:233-240(1989).  
RN [6]  
RP SEQUENCE OF 77-121.  
RX MEDLINE=89286593; PubMed=2525380;  
RA Flynn T.G., Brar A., Tremblay L., Sarda I., Lyons C., Jennings D.B.;  
RT "Isolation and characterization of iso-rANP, a new natriuretic peptide from rat atria."  
RL Biochem. Biophys. Res. Commun. 161:830-837(1989).  
RN [7]  
RP SEQUENCE OF 99-115.  
RX MEDLINE=89286579; PubMed=2525379;  
RA Itoh H., Nakao K., Kambayashi Y., Hosoda K., Saito Y., Yamada T., Mukoyama M., Arai H., Shirakami G., Suga S.-I., Yoshida I., Inouye K., Imura H.;

RT "Occurrence of a novel cardiac natriuretic peptide in rats."  
RL Biochem. Biophys. Res. Commun. 161:732-739(1989).  
CC -1- FUNCTION: Acts as a cardiac hormone with a variety of biological actions including natriuresis, diuresis, vasorelaxation, and inhibition of renin and aldosterone secretion. It is thought to play a key role in cardiovascular homeostasis. Helps restore the body's salt and water balance. Improves heart function.  
CC -1- SUBCELLULAR LOCATION: Secreted.  
CC -1- TISSUE SPECIFICITY: Brain and also in atria, but at much lower levels than ANP.  
CC -1- SIMILARITY: Belongs to the natriuretic peptide family.  
CC -----  
CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/> or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
CC -----  
DR EMBL; M25297; AAA57269.1; -;  
DR EMBL; M60731; AAA41456.1; -;  
DR EMBL; M60266; AAA41455.1; -;  
DR PIR; A30162; A30162.  
DR InterPro; IPR002408; Br\_natriureticpep.  
DR InterPro; IPR000663; Natr\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PR00710; NATPEPTIDES.  
DR PRODOM; PD006651; Br\_natriureticpep; 1.  
DR SMART; SM00183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
KW Vasoactive; Signal.  
FT SIGNAL 1 26  
FT PEPTIDE 27 121 GAMMA-BRAIN NATRIURETIC PEPTIDE.  
FT PEPTIDE 77 121 BRAIN NATRIURETIC PEPTIDE (5 kDa CARDIAC  
FT PEPTIDE NATRIURETIC PEPTIDE) (BNP-45).  
FT DISULFID 99 115  
FT CONFLICT 15 15 L -> V (IN REF. 2).  
FT CONFLICT 120 120 L -> Q (IN REF. 6).  
SQ SEQUENCE 121 AA; 13656 MW; B5D415ED18C7294 CRC64;  
Query Match 48.5%; Score 82; DB 1; Length 121;  
Best Local Similarity 57.1%; Pred. No. 3.2e-05;  
Matches 16; Conservative 3; Mismatches 9; Indels 0; Gaps 0;  
QY 3 KVVQSGCGFRKMDRISSSSGLGCKVLR 30  
Db 92 KVAHSSSCFGKIDRIGAVSRLGCDGLR 119  
RESULT 15  
ANFB\_MOUSE STANDARD; PRT; 152 AA.  
ID ANFB\_MOUSE STANDARD; PRT; 152 AA.  
AC P05125;  
DT 13-AUG-1987 (Rel. 05, Created)  
DT 13-AUG-1987 (Rel. 05, Last sequence update)  
DT 10-OCT-2003 (Rel. 42, Last annotation update)  
DE Atrial natriuretic factor precursor (ANF) (Atrial natriuretic peptide) (ANP) (Prepronatriodilatin).  
GN NPPA OR PND.  
OS Mus musculus (Mouse).  
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
OX NCBI\_TaxID=10090;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=85065766; PubMed=6542248;  
RA Seidman C.E., Bloch K.D., Klein K.A., Smith J.A., Seidman J.G.;  
RT "Nucleotide sequences of the human and mouse atrial natriuretic factor genes."  
RL Science 226:1206-1209(1984).  
CC -1- FUNCTION: Atrial natriuretic factor (ANF) is a potent vasoactive substance synthesized in mammalian atria and is thought to play a

```

CC key role in cardiovascular homeostasis. Has a cGMP-stimulating
CC activity.
CC -|- SUBCELLULAR LOCATION: Secreted.
CC -|- MISCELLANEOUS: A disulfide bond is required for full activity of
CC atriopeptins.
CC -|- SIMILARITY: Belongs to the natriuretic peptide family.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL, K02781; AAA37235.1; -.
CC PIR, A29370; AMMS.
CC MGD, MGI:97367; Nppa.
CC InterPro; IPR002407; At_natriurtcep.
CC InterPro; IPR000663; Natr_peptide.
CC Pfam; PF00212; ANP; 1.
CC PRINTS; PR00710; NATPEPTIDES.
CC ProDom; PD005107; At_natriurtcep; 1.
CC SMART; SM00183; NAT_PEP; 1.
CC PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.
CC Vasoactive; Signal.
CC SIGNAL. 1 24 POTENTIAL.
CC FT PROPEP 25 124
CC FT PEPTIDE 126 149 AURICULIN A (BY SIMILARITY).
CC FT PEPTIDE 126 150 AURICULIN B (BY SIMILARITY).
CC FT PEPTIDE 127 149 ATRIOPEPTIN I (BY SIMILARITY).
CC FT PEPTIDE 127 147 ATRIOPEPTIN II (BY SIMILARITY).
CC FT DISULFID 129 145 BY SIMILARITY.
CC SEQUENCE 152 AA; 16645 MW; FC8CC43EAFCA227 CRC64;

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	Query Match	48.5%;	Score 82;	DB 1;	Length 152;
	Best Local Similarity	48.3%;	Pred. No.	4.1e-05;	
Matches	14;	Conservative	6;	Mismatches	9;
				Indels	0;
				Gaps	0;
Qy	2 PKMVGSGCFGRKMDRISSSGIGCKVLR	30			
	::				
Ddb	121 PSLRRSSCFGRIDRIGAQSGLGCNSFR	149			

```
Search completed: March 29, 2004, 14:41:50
Job time : 11 secs
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GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: March 29, 2004, 14:36:39 ; Search time 39 Seconds  
(without alignments)  
258.887 Million cell updates/sec

Title: US-09-902-517-49  
Perfect score: 169  
Sequence: 1 SPKMVGSGCFGRKMDRISSSSGLGCKYLRRH 32

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 1017041 seqs, 315518202 residues  
Total number of hits satisfying chosen parameters: 1017041

Minimum DB seq length: 0  
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

- Database : SPTREMBL 25:\*
- 1: sp\_archaea:\*
  - 2: sp\_bacteria:\*
  - 3: sp\_fungi:\*
  - 4: sp\_human:\*
  - 5: sp\_invertebrate:\*
  - 6: sp\_mammal:\*
  - 7: sp\_mhc:\*
  - 8: sp\_organelle:\*
  - 9: sp\_phage:\*
  - 10: sp\_plant:\*
  - 11: sp\_rodent:\*
  - 12: sp\_virus:\*
  - 13: sp\_vertebrate:\*
  - 14: sp\_unclassified:\*
  - 15: sp\_virus:\*
  - 16: sp\_bacteriaph:\*
  - 17: sp\_archaeap:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	118	69.8	112	6	Q9GLK5	Q9glk5 felis silve
2	118	69.8	132	6	Q9GLK4	Q9glk4 felis silve
3	96	56.8	126	13	Q8AYR5	Q8ayr5 oryzias lat
4	92	54.4	146	13	Q7T217	Q7t217 oncorhynch
5	92	54.4	152	13	Q9YGV1	Q9ygv1 salmo salar
6	91	53.8	138	13	Q805E8	Q805e8 oreochromis
7	91	53.8	146	13	Q7TIQ2	Q7tiq2 oryzias lat
8	90	53.3	130	13	Q805D5	Q805d5 fugu rubrip
9	88	52.1	162	5	Q7YZU5	Q7yzu5 eptatretus
10	87	51.5	152	6	Q9TQM1	Q9tqm1 balaenopter
11	87	51.5	153	6	Q9GLD0	Q9glD0 felis silve
12	87	51.5	155	6	Q29130	Q29130 tupaia bela
13	86	50.9	181	13	Q90Y12	Q90y12 crocalus du
14	86	50.9	181	13	Q90Y11	Q90y11 crocalus du
15	83	49.1	140	13	Q805E9	Q805e9 oreochromis
16	82	48.5	120	13	Q805D3	Q805d3 fugu rubrip

17	82	48.5	121	13	Q80017	Q80017 oryzias lat
18	82	48.5	133	13	Q805D7	Q805d7 fugu rubrip
19	82	48.5	152	11	Q8VHH2	Q8vhh2 notomys ale
20	81	47.9	139	13	P79799	P79799 micrurus co
21	79	46.7	33	11	Q9Q296	Q9q296 cavla porce
22	79	46.7	126	13	Q805D6	Q805d6 fugu rubrip
23	79	46.7	131	13	Q8AYR6	Q8ayr6 oryzias lat
24	79	46.7	131	13	Q8AXR3	Q8axr3 oncorhynch
25	79	46.7	131	13	Q8AXR2	Q8axr2 oncorhynch
26	79	46.7	131	13	Q805E7	Q805e7 oreochromis
27	79	46.7	147	11	Q8VHG9	Q8vhg9 notomys ale
28	78	46.2	139	13	Q805D8	Q805d8 fugu rubrip
29	77	45.6	121	11	Q91V40	Q91v40 mus spicile
30	77	45.6	121	11	O55086	O55086 mus musculu
31	77	45.6	144	13	Q805E6	Q805e6 fundulus he
32	77	45.6	150	13	Q9PSV2	Q9psv2 anguilla ja
33	76	45.0	140	13	Q9PSV1	Q9psv1 anguilla ja
34	76	45.0	221	13	Q7T1M4	Q7tim4 bothrops ja
35	76	45.0	263	13	Q9PT52	Q9pt52 agkistrodon
36	76	45.0	265	13	Q8QG91	Q8qg91 bothrops in
37	75	44.4	111	6	Q8HXV7	Q8hxv7 pan troglod
38	75	44.4	111	6	Q8HXV6	Q8hxv6 gorilla gor
39	75	44.4	111	6	Q8HXV5	Q8hxv5 pongo pygma
40	75	44.4	111	6	Q8HXV4	Q8hxv4 macaca sp.
41	75	44.4	111	6	Q8HXV3	Q8hxv3 saginus oe
42	75	44.4	136	13	Q98U17	Q98u17 triakis scy
43	75	44.4	265	13	Q9PW56	Q9pw56 bothrops ja
44	72	42.6	150	13	Q90X61	Q90x61 bufo marinu
45	71.5	42.3	147	13	Q9DGK8	Q9dkg8 xenopus lae

ALIGNMENTS

RESULT 1				
ID	Q9GLK5	PRELIMINARY;	PRT;	112 AA.
AC	Q9GLK5;			
DT	01-MAR-2001 (TrEMBLrel. 16, Created)			
DT	01-MAR-2001 (TrEMBLrel. 16, Last sequence update)			
DT	01-JUN-2003 (TrEMBLrel. 24, Last annotation update)			
DE	Brain natriuretic peptide (Fragment).			
OS	Felis silvestris catus (Cat).			
CC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
CC	Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.			
OX	NCBI_Taxid=9685;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RA	Liu Z.L., Wiedmeyer C.E., Solter P.F., Sisson D.D.;			
RT	"Cat brain natriuretic peptide gene.";			
RL	Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.			
DR	EMBL; AF251261; AAG13660.1; -			
DR	GO; GO:0005576; C:extracellular; IEA.			
DR	GO; GO:0005179; F:hormone activity; IEA.			
DR	InterPro; IPR002408; Br_natriureticpep.			
DR	InterPro; IPR000663; Natri_peptide.			
DR	Pfam; PF00212; ANP; 1.			
DR	PRINTS; PR00710; NATPEPTIDES.			
DR	ProDom; PD006651; Br_natriureticpep; 1.			
DR	SMART; SM00183; NAT_PEP; 1.			
DR	PROSITE; PS00263; NATRIURETIC_PEPTIDE; 1.			
FT	NON_TER	1		
FT	NON_TER	112	112	
SQ	SEQUENCE	112 AA;	12083 MW;	580224F12984FFB2 CRC64;

Query Match

Best Local Similarity 69.8%; Score 118; DB 6; Length 112;

Matches 22; Conservative 4; Mismatches 6; Indels 0; Gaps 0;

QY 1 SPKMVGSGCFGRKMDRISSSSGLGCKYLRRH 32  
DB 81 SSKMRDSRCFGRRLDRIGSLSGCNVLRH 112

RESULT 2  
Q9GLK4 PRELIMINARY; PRT; 132 AA.  
ID Q9GLK4  
AC Q9GLK4;  
DT 01-MAR-2001 (TREMBlrel. 16, Created)  
DT 01-MAR-2001 (TREMBlrel. 16, last sequence update)  
DT 01-JUN-2003 (TREMBlrel. 24, last annotation update)  
DE Brain natriuretic peptide.  
GN BNP.  
OS Felis silvestris catus (Cat).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.  
OX NCBI\_TaxID=9685;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Heart atrium;  
RA Liu Z.L., Wiedmeyer C.E., Solter P.F., Sisson D.D.;  
RT "Cat mRNA for brain natriuretic peptide (BNP).";  
RL Submitted (APR-2000) to the EMBL/GenBank/DBJ databases.  
RN [2]  
RP SEQUENCE FROM N.A.  
OS Liu Z.L.;  
RT "Felis catus brain natriuretic peptide (BNP) gene.";  
RL Submitted (SEP-2001) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF253495; AAG13661.1; -  
DR EMBL; AF425738; AAL24812.1; -  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR002408; Br\_natriureticpep.  
DR InterPro; IPR000663; Natri\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PR00710; NATPEPTIDES.  
DR ProDom; PD006651; Br\_natriureticpep; 1.  
DR SMART; SMO0183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC PEPTIDE; 1.  
SQ SEQUENCE 132 AA; 14343 MW; D069B5F76A6C3510 CRC64;  
Query Match 69.8%; Score 118; DB 6; Length 132;  
Best Local Similarity 68.8%; Pred. No. 1.4e-09;  
Matches 22; Conservative 4; Mismatches 6; Indels 0; Gaps 0;  
QY 1 SPKNVQSGCGFGRKMDRISSSSGLGCKVLRH 32  
DB 101 SSKMMRDSRCFGRRLDRISLSGLGCNVLRH 132  
RESULT 3  
Q8AYR5 PRELIMINARY; PRT; 126 AA.  
ID Q8AYR5  
AC Q8AYR5;  
DT 01-MAR-2003 (TREMBlrel. 23, Created)  
DT 01-MAR-2003 (TREMBlrel. 23, last sequence update)  
DT 01-OCT-2003 (TREMBlrel. 25, last annotation update)  
DE C-type natriuretic peptide-2.  
GN CNP-2.  
OS Oryzias latipes (Medaka fish) (Japanese ricefish).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;  
OC Acanthomorpha; Acanthopterygii; Percomorpha; Atherinomorpha;  
OC Belontiiformes; Adrianichthyidae; Oryziinae; Oryzias.  
OX NCBI\_TaxID=8090;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Inoue K., Takei Y.;  
RT "C-type natriuretic peptide of medaka (Oryzias latipes).";  
RL Submitted (MAR-2002) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AB081456; BAC15761.1; -  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR00663; Natri\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PR00710; NATPEPTIDES.

DR SMART; SMO0183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC PEPTIDE; 1.  
SQ SEQUENCE 126 AA; 13400 MW; 9D5D7B8DDECB0F92 CRC64;  
Query Match 56.8%; Score 96; DB 13; Length 126;  
Best Local Similarity 78.3%; Pred. No. 2.4e-06;  
Matches 18; Conservative 0; Mismatches 5; Indels 0; Gaps 0;  
QY 4 MVQSGCGFGRKMDRISSSSGLGC 26  
DB 104 MVAGGCGFGMKMDRIGSISGLGC 126  
RESULT 4  
Q7T217 PRELIMINARY; PRT; 146 AA.  
ID Q7T217  
AC Q7T217;  
DT 01-OCT-2003 (TREMBlrel. 25, Created)  
DT 01-OCT-2003 (TREMBlrel. 25, last sequence update)  
DT 01-OCT-2003 (TREMBlrel. 25, last annotation update)  
DE Atrial natriuretic peptide.  
GN ANP.  
OS Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;  
OC Protacanthopterygii; Salmoniformes; Salmonidae; Oncorhynchus.  
OX NCBI\_TaxID=8022;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Inoue K., Russel M.J., Olson K.R., Takei Y.;  
RT "C-type natriuretic peptide of rainbow trout (Oncorhynchus mykiss).";  
RL Submitted (DEC-2001) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AB076603; BAC77769.1; -  
SQ SEQUENCE 146 AA; 16043 MW; FED2CE3C79121BD0 CRC64;  
Query Match 54.4%; Score 92; DB 13; Length 146;  
Best Local Similarity 70.8%; Pred. No. 1.1e-05;  
Matches 17; Conservative 2; Mismatches 5; Indels 0; Gaps 0;  
QY 8 SGCFGRKMDRISSSSGLGCKVLR 31  
DB 122 SGCFGARMDRIGTSSGLGCSPKRR 145  
RESULT 5  
Q9YGJ1 PRELIMINARY; PRT; 152 AA.  
ID Q9YGJ1  
AC Q9YGJ1;  
DT 01-MAY-1999 (TREMBlrel. 10, Created)  
DT 01-MAY-1999 (TREMBlrel. 10, last sequence update)  
DT 01-JUN-2003 (TREMBlrel. 24, last annotation update)  
DE Cardiac hormone (Cardiac peptide precursor).  
GN Salmo salar (Atlantic salmon).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;  
OC Protacanthopterygii; Salmoniformes; Salmonidae; Salmo.  
OX NCBI\_TaxID=8030;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Teronen V., Arjamaa O., Ruskoaho H., Vuolteenaho O.;  
RT "New vasoactive cardiac hormone released by mechanical load.";  
RL Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.  
RN [2]  
RP SEQUENCE OF 5-152 FROM N.A.  
RA Majalahti-Palviainen T., Hirvonen M., Teronen V., Vuolteenaho O.;  
RT "Gene structure of a novel cardiac peptide related to natriuretic peptides from Salmo salar.";  
RL Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AJ001806; CAA05022.1; -  
DR EMBL; AJ006421; CAA07023.1; -  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.

DR InterPro; IPR000663; Natr\_peptide.  
 DR Pfam; PF00212; ANP; 1.  
 DR PRINTS; PR00710; NATPEPTIDES.  
 DR SMART; SM00183; NAT\_PEP; 1.  
 DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
 KW Signal.  
 FT CHAIN 124 152 CARDIAC HORMONE.  
 SQ SEQUENCE 152 AA; 16740 MW; E1D3E38A159CFEEA CRC64;

Query Match 54.4%; Score 92; DB 13; Length 152;  
 Best Local Similarity 70.8%; Pred. No. 1.1e-05;  
 Matches 17; Conservative 2; Mismatches 5; Indels 0; Gaps 0;

QY 8 SGCGFRKMDRISSSGLGCKVLRH 31  
 :|||:||||:|||||  
 Db 128 SGCGFRMDRIGTSSGLGCSPPKR 151

## RESULT 6

ID Q805E8 PRELIMINARY; PRT; 138 AA.  
 AC Q805E8;  
 DT 01-JUN-2003 (TReMBLrel. 24, Created)  
 DT 01-JUN-2003 (TReMBLrel. 24, Last sequence update)  
 DT 01-OCT-2003 (TReMBLrel. 25, Last annotation update)  
 DE B-type natriuretic peptide.  
 GN BNP.  
 OS Oreochromis mossambicus (Mozambique tilapia) (Tilapia mossambica).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;  
 OC Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes; Labroidae;  
 OC Cichlidae; Oreochromis.  
 OX NCBI\_TaxID=8127;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=Heart;  
 RA Inoue K., Takei Y.;  
 RT "Natriuretic Peptides of Tilapia."  
 RL Submitted (JUL-2002) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AB087284; BAC55025.1; -.  
 DR GO; GO:0005576; C:extracellular; IEA.  
 DR GO; GO:0005179; F:hormone activity; IEA.  
 DR InterPro; IPR000663; Natr\_peptide.  
 DR Pfam; PF00212; ANP; 1.  
 DR PRINTS; PR00710; NATPEPTIDES.  
 DR SMART; SM00183; NAT\_PEP; 1.  
 DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
 SQ SEQUENCE 138 AA; 15189 MW; 5A023AB1F4F452FA CRC64;

Query Match 53.8%; Score 91; DB 13; Length 138;  
 Best Local Similarity 59.3%; Pred. No. 1.4e-05;  
 Matches 16; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

QY 6 QGSGCFGRKMDRISSSGLGCKVLRH 32  
 :|||:||||:|||||  
 Db 107 RSSGCFGRMDRIGSMSSLGCTVGRY 133

## RESULT 7

ID Q7T1Q2 PRELIMINARY; PRT; 146 AA.  
 AC Q7T1Q2;  
 DT 01-OCT-2003 (TReMBLrel. 25, Created)  
 DT 01-OCT-2003 (TReMBLrel. 25, Last sequence update)  
 DT 01-OCT-2003 (TReMBLrel. 25, Last annotation update)  
 DE B-type natriuretic peptide.  
 GN BNP.  
 OS Oryzias latipes (Medaka fish) (Japanese ricefish).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;  
 OC Acanthomorpha; Acanthopterygii; Percomorpha; Atherinomorpha;  
 OC Belontiiformes; Adrianichthyidae; Oryziinae; Oryzias.  
 OX NCBI\_TaxID=8090;

RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=Heart;  
 RA Inoue K., Takei Y.;  
 RT "B-type natriuretic peptide of medaka Oryzias latipes."  
 RL Submitted (JAN-2003) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AB099700; BAC79151.1; -.  
 SQ SEQUENCE 146 AA; 16455 MW; E0EA2C0C70DAD51F CRC64;

Query Match 53.8%; Score 91; DB 13; Length 146;  
 Best Local Similarity 59.3%; Pred. No. 1.5e-05;  
 Matches 16; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

QY 6 QGSGCFGRKMDRISSSGLGCKVLRH 32  
 :|||:||||:|||||  
 Db 117 RSSGCFGRMDRIGSMSSLGCTVGRY 143

## RESULT 8

ID Q805D5 PRELIMINARY; PRT; 130 AA.  
 AC Q805D5;  
 DT 01-JUN-2003 (TReMBLrel. 24, Created)  
 DT 01-JUN-2003 (TReMBLrel. 24, Last sequence update)  
 DT 01-OCT-2003 (TReMBLrel. 25, Last annotation update)  
 DE C-type natriuretic peptide-2.  
 GN CNP-2.  
 OS Fugu rubripes (Japanese pufferfish) (Takifugu rubripes).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;  
 OC Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;  
 OC Tetraodontidae; Tetraodontidae; Takifugu.  
 OX NCBI\_TaxID=31033;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=Brain;  
 RA Inoue K., Takei Y.;  
 RT "Six natriuretic peptide genes in the pufferfish genome."  
 RL Submitted (AUG-2002) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AB089936; BAC57072.1; -.  
 DR GO; GO:0005576; C:extracellular; IEA.  
 DR GO; GO:0005179; F:hormone activity; IEA.  
 DR InterPro; IPR000663; Natr\_peptide.  
 DR Pfam; PF00212; ANP; 1.  
 DR PRINTS; PR00710; NATPEPTIDES.  
 DR SMART; SM00183; NAT\_PEP; 1.  
 DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
 SQ SEQUENCE 130 AA; 13792 MW; 41BE1FC1A5F7E4C CRC64;

Query Match 53.3%; Score 90; DB 13; Length 130;  
 Best Local Similarity 73.9%; Pred. No. 1.9e-05;  
 Matches 17; Conservative 1; Mismatches 5; Indels 0; Gaps 0;

QY 4 MVQSGCFGRKMDRISSSGLGC 26  
 |||:||||:|||||  
 Db 108 MVGRCGCFGMKIDRIGSISGLGC 130

## RESULT 9

ID Q7YZU5 PRELIMINARY; PRT; 162 AA.  
 AC Q7YZU5;  
 DT 01-OCT-2003 (TReMBLrel. 25, Created)  
 DT 01-OCT-2003 (TReMBLrel. 25, Last sequence update)  
 DT 01-OCT-2003 (TReMBLrel. 25, Last annotation update)  
 DE Natriuretic peptide.  
 GN Eptatretus burgeri (Inshore hagfish).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Hyperotreti; Myxiniiformes;  
 OC Myxiniidae; Eptatretinae; Eptatretus.  
 OX NCBI\_TaxID=7764;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Kawakoshi A., Hyodo S., Takei Y.;

RT "Hagfish natriuretic peptide precursor mRNA of Eptatretus burgeri.";  
 RL Submitted (JUL-2002) to the EMBL/GenBank/DBJ databases.

DR EMBL; AB087732; BAC78816.1;  
 FT CHAIN 94 161 natriuretic peptide.  
 SQ SEQUENCE 162 AA; 18220 MW; FAE866403F1A48F7 CRC64;

Query Match 52.1%; Score 88; DB 5; Length 162;  
 Best Local Similarity 69.6%; Pred. No. 4.7e-05;  
 Matches 16; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

OY 9 GCGFRKMDRISSSSGLGCKVLR 31  
 DB 135 GCGVGMDRIGASTGLGCRGAR 157

RESULT 10

O9TQM1 PRELIMINARY; PRT; 152 AA.

AC O9TQM1;  
 DT 01-MAY-2000 (TREMBlrel. 13, Created)  
 DT 01-MAY-2000 (TREMBlrel. 13, Last sequence update)  
 DT 01-JUN-2003 (TREMBlrel. 24, Last annotation update)  
 DE Atrial natriuretic peptide precursor.  
 OS Balaenoptera physalus (Finback whale) (Common torqual).  
 OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Mysticeti;  
 OC Balaenopteridae; Balaenoptera.  
 OX NCBI\_TaxID=9770;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Taskinen T.H., Vuolteenaho O.J.;  
 RT "Structure of fin whale atrial natriuretic peptide cDNA.";  
 RL Submitted (JUN-1998) to the EMBL/GenBank/DBJ databases.

DR EMBL; AJ006755; CAB65023.1;  
 DR EMBL; AJ006785; CAB64785.1;  
 DR GO; GO:0005576; C:extracellular; IEA.  
 DR GO; GO:0005179; F:hormone activity; IEA.  
 DR InterPro; IPR000663; Natri\_peptide.  
 DR Pfam; PF00212; ANP; 1.  
 DR PRINTS; PR00710; NATPEPTIDES.  
 DR SMART; SM00183; NAT\_PEP; 1.  
 DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
 KW Signal.

KM SIGNAL  
 FT CHAIN 1 24 POTENTIAL.  
 FT SIGNAL 25 150 ATRIAL NATRIURETIC PEPTIDE.  
 SQ SEQUENCE 152 AA; 16454 MW; 513133C664038FF6 CRC64;

Query Match 51.5%; Score 87; DB 6; Length 152;  
 Best Local Similarity 50.0%; Pred. No. 6.2e-05;  
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

OY 1 SPKMVQSGCGFRKMDRISSSSGLGCKVLR 30  
 DB 120 APRSLRRSSCGFRMDRIGASGLGNSFR 149

RESULT 11

O9GLD0 PRELIMINARY; PRT; 153 AA.

AC O9GLD0;  
 DT 01-MAR-2001 (TREMBlrel. 16, Created)  
 DT 01-MAR-2001 (TREMBlrel. 16, Last sequence update)  
 DT 01-JUN-2003 (TREMBlrel. 24, Last annotation update)  
 DE Atrial natriuretic peptide.  
 OS Felis silvestris catus (Cat).  
 OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.  
 OX NCBI\_TaxID=9685;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Biondo A.W., Liu Z.L., Solter P.F., Sisson D.D.;  
 RL Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.

DR EMBL; AF298813; AAG23837.1;

DR GO; GO:0005576; C:extracellular; IEA.  
 DR GO; GO:0005179; F:hormone activity; IEA.  
 DR InterPro; IPR000663; Natri\_peptide;  
 DR Pfam; PF00212; ANP; 1.  
 DR PRINTS; PR00710; NATPEPTIDES.  
 DR SMART; SM00183; NAT\_PEP; 1.  
 DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
 SQ SEQUENCE 153 AA; 16583 MW; 32DEBD205B285686 CRC64;

Query Match 51.5%; Score 87; DB 6; Length 153;  
 Best Local Similarity 50.0%; Pred. No. 6.3e-05;  
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

OY 1 SPKMVQSGCGFRKMDRISSSSGLGCKVLR 30  
 DB 121 APRSLRRSSCGFRMDRIGASGLGNSFR 150

RESULT 12

O29130 PRELIMINARY; PRT; 155 AA.

AC O29130;  
 DT 01-NOV-1996 (TREMBlrel. 01, Created)  
 DT 01-NOV-1996 (TREMBlrel. 01, Last sequence update)  
 DT 01-JUN-2003 (TREMBlrel. 24, Last annotation update)  
 DE Cardioidilatin, atrial natriuretic peptide.  
 OS Tupia belangeri (Northern tree shrew).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Scandentia; Tupaiidae; Tupia.  
 OX NCBI\_TaxID=37347;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA TISSUE=Heart;  
 RC TISSUE=Heart;  
 RA Schneidemann S., Maegert H.J., Forssmann W.G.;  
 RT "nucleotide sequence of the cDNA for Tupia belangeri cardioidilatin /  
 RT atrial natriuretic peptide.";  
 RL Submitted (MAR-1996) to the EMBL/GenBank/DBJ databases.

DR EMBL; Z70294; CAA94310.1;  
 DR GO; GO:0005576; C:extracellular; IEA.  
 DR GO; GO:0005179; F:hormone activity; IEA.  
 DR InterPro; IPR002408; Br\_natriurtcep.  
 DR InterPro; IPR000663; Natri\_peptide.  
 DR Pfam; PF00212; ANP; 1.  
 DR PRINTS; PR00710; NATPEPTIDES.  
 DR ProDom; PD00651; Br\_natriurtcep; 1.  
 DR SMART; SM00183; NAT\_PEP; 1.  
 DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
 SQ SEQUENCE 155 AA; 16860 MW; 22EF05A3748DAB68 CRC64;

Query Match 51.5%; Score 87; DB 6; Length 155;  
 Best Local Similarity 50.0%; Pred. No. 6.3e-05;  
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

OY 1 SPKMVQSGCGFRKMDRISSSSGLGCKVLR 30  
 DB 123 APRSLRRSSCGFRMDRIGASGLGNSFR 152

RESULT 13

O90Y12 PRELIMINARY; PRT; 181 AA.

AC O90Y12;  
 DT 01-DEC-2001 (TREMBlrel. 19, Created)  
 DT 01-DEC-2001 (TREMBlrel. 19, Last sequence update)  
 DT 01-JUN-2003 (TREMBlrel. 24, Last annotation update)  
 DE Bradykinin potentiating peptide and C-type natriuretic peptide isoform  
 DE 1.  
 OS Crotalus durissus terrificus (South American rattlesnake).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Lepidosauria; Squamata; Scleroglossa; Serpentes; Colubroidea;  
OC Viperidae; Crotalinae; Crotalus.  
OX NCBI\_TaxID=8732;  
RN [1]  
RN SEQUENCE FROM N.A.  
RC TISSUE=Venom gland;  
RA Hayashi M.A.F., Radis-Baptista G., Barbosa S.R., Yamane T.,  
RA Camargo A.C.M.;  
RT "Crotalus durissus terrificus bradykinin potentiating peptide  
precursor";  
RL Submitted (SEP-2000) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF308593; AAL09426.1; -  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR000663; Natr\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PR00710; NATPEPTIDES.  
DR SMART; SM00183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
SQ SEQUENCE 181 AA; 18560 MW; 7B5ADC5B9372D07F CRC64;

Query Match 50.9%; Score 86; DB 13; Length 181;  
Best Local Similarity 75.0%; Pred. No. 0.0001;  
Matches 15; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

OY 7 GSGCFGRKMDRISSSSGLGC 26  
Db 162 GNGCFGLKLDRIIGSMGLGC 181

RESULT 14  
O90Y11 PRELIMINARY; PRT; 181 AA.  
AC Q90Y11; 01-DEC-2001 (TREMBlrel. 19, Created)  
DT 01-DEC-2001 (TREMBlrel. 19, Last sequence update)  
DT 01-JUN-2003 (TREMBlrel. 24, Last annotation update)  
DE Bradykinin potentiating peptide and C-type natriuretic peptide isoform  
2.  
OS Crotalus durissus terrificus (South American rattlesnake).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Lepidosauria; Squamata; Scleroglossa; Serpentes; Colubroidea;  
OC Viperidae; Crotalinae; Crotalus.  
OX NCBI\_TaxID=6732;  
RN [1]  
RN SEQUENCE FROM N.A.  
RC TISSUE=Venom gland;  
RA Hayashi M.A.F., Radis-Baptista G., Barbosa S.R., Yamane T.,  
RA Camargo A.C.M.;  
RT "Crotalus durissus terrificus bradykinin potentiating peptide and C-  
type natriuretic peptide precursor isoform2";  
RL Submitted (SEP-2000) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF308594; AAL09427.1; -  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR000663; Natr\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PR00710; NATPEPTIDES.  
DR SMART; SM00183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
SQ SEQUENCE 181 AA; 18507 MW; 9B2E95D38A5FF27 CRC64;

Query Match 50.9%; Score 86; DB 13; Length 181;  
Best Local Similarity 75.0%; Pred. No. 0.0001;  
Matches 15; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

OY 7 GSGCFGRKMDRISSSSGLGC 26  
Db 162 GNGCFGLKLDRIIGSMGLGC 181

RESULT 15

Q805E9  
ID Q805E9 PRELIMINARY; PRT; 140 AA.  
AC Q805E9; 01-JUN-2003 (TREMBlrel. 24, Created)  
DT 01-JUN-2003 (TREMBlrel. 24, Last sequence update)  
DT 01-OCT-2003 (TREMBlrel. 25, Last annotation update)  
DE Atrial natriuretic peptide.  
GN ANP.  
OS Oreochromis mossambicus (Mozambique tilapia) (Tilapia mossambica).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;  
OC Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes; Labroidae;  
OC Cichlidae; Oreochromis.  
OX NCBI\_TaxID=8127;  
RN [1]  
RN SEQUENCE FROM N.A.  
RC TISSUE=Heart;  
RA Inoue K., Takei Y.;  
RT "Natriuretic peptides of Tilapia";  
RL Submitted (JUL-2002) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AB087283; BAC55024.1; -  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR002408; Br\_natriurtcep.  
DR InterPro; IPR000663; Natr\_peptide.  
DR Pfam; PF00212; ANP; 1.  
DR PRINTS; PR00710; NATPEPTIDES.  
DR ProDom; PD006651; Br\_natriurtcep; 1.  
DR SMART; SM00183; NAT\_PEP; 1.  
DR PROSITE; PS00263; NATRIURETIC\_PEPTIDE; 1.  
SQ SEQUENCE 140 AA; 15577 MW; 5F2D214FA560DB0F CRC64;

Query Match 49.1%; Score 83; DB 13; Length 140;  
Best Local Similarity 73.7%; Pred. No. 0.00022;  
Matches 14; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

OY 8 GSGCFGRKMDRISSSSGLGC 26  
Db 117 GSGCFGRKMDRISSSSGLGC 135

Search completed: March 29, 2004, 14:42:42  
Job time : 40 secs



GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: March 29, 2004, 14:41:55 ; Search time 14 Seconds  
(without alignments)  
41.857 Million cell updates/sec

Title: US-09-902-517-49  
Perfect score: 169  
Sequence: 1 SPKMVQSGGCFGRKMDRISSSSGLGCKVLRH 32

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 152794 seqs, 18312476 residues

Total number of hits satisfying chosen parameters: 152794

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : Pending Patents AA New:  
1: /cgn2\_6/ptodata/1/paa/PCT\_NEW\_COMB.pep:\*  
2: /cgn2\_6/ptodata/1/paa/US06\_NEW\_COMB.pep:\*  
3: /cgn2\_6/ptodata/1/paa/US07\_NEW\_COMB.pep:\*  
4: /cgn2\_6/ptodata/1/paa/US08\_NEW\_COMB.pep:\*  
5: /cgn2\_6/ptodata/1/paa/US09\_NEW\_COMB.pep:\*  
6: /cgn2\_6/ptodata/1/paa/US10\_NEW\_COMB.pep:\*  
7: /cgn2\_6/ptodata/1/paa/US60\_NEW\_COMB.pep:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	ID	Description
1	169	100.0	32	US-10-775-204-1802	Sequence 1802, Ap
2	169	100.0	134	US-10-775-204-1277	Sequence 1277, Ap
3	169	100.0	641	US-10-775-204-1634	Sequence 1634, Ap
4	169	100.0	719	US-10-775-204-1275	Sequence 1275, Ap
5	87	51.5	32	US-10-775-204-2203	Sequence 2203, Ap
6	87	51.5	153	US-10-796-307-725	Sequence 725, App
7	78	46.2	28	US-10-775-204-2207	Sequence 2207, App
8	78	46.2	31	US-10-681-389-22	Sequence 22, Appl
9	50.5	29.9	657	PCT-US04-05092-28	Sequence 28, Appl
10	49	29.0	874	US-10-487-092-18	Sequence 18, Appl
11	47.5	28.1	1307	US-10-796-307-608	Sequence 608, Appl
12	46.5	27.5	147	US-10-767-701-46988	Sequence 46988, A
13	45	26.6	116	US-10-767-701-33741	Sequence 33741, A
14	45	26.6	182	US-10-767-701-32774	Sequence 32774, A
15	44.5	26.3	378	US-09-979-167-123	Sequence 123, App
16	44	26.0	219	US-10-100-683-8839	Sequence 8839, App
17	44	26.0	220	US-10-799-747-135	Sequence 135, App
18	44	26.0	241	US-10-767-701-35710	Sequence 35710, A
19	44	26.0	682	US-10-649-400-4	Sequence 4, Appli
20	43.5	25.7	209	PCT-US04-05654-1900	Sequence 1900, Ap
21	43	25.4	173	US-10-767-701-45583	Sequence 45583, A
22	43	25.4	331	US-10-767-701-46510	Sequence 46510, A
23	43	25.4	996	PCT-US04-05654-512	Sequence 512, App
24	42	24.9	145	US-10-767-701-44616	Sequence 44616, A
25	42	24.9	281	US-10-767-701-44746	Sequence 44746, A
26	42	24.9	312	US-10-767-701-45391	Sequence 45391, A

27	42	24.9	440	1	PCT-US04-05654-1132	Sequence 1132, Ap
28	41.5	24.6	133	6	US-10-767-701-43720	Sequence 43720, A
29	41.5	24.6	206	6	US-10-767-701-32413	Sequence 32413, A
30	41	24.3	88	6	US-10-767-701-49917	Sequence 49917, A
31	41	24.3	118	6	US-10-767-701-54561	Sequence 54561, A
32	41	24.3	132	6	US-10-793-479-7413	Sequence 7413, Ap
33	41	24.3	176	6	US-10-767-701-37821	Sequence 37821, A
34	41	24.3	176	6	US-10-767-701-57725	Sequence 57725, A
35	41	24.3	183	6	US-10-658-834A-902	Sequence 902, App
36	41	24.3	192	6	US-10-767-701-41425	Sequence 41425, A
37	41	24.3	235	6	US-10-767-701-38475	Sequence 38475, A
38	41	24.3	301	6	US-10-767-701-45101	Sequence 45101, A
39	41	24.3	338	1	PCT-US04-05654-1687	Sequence 1687, Ap
40	41	24.3	483	6	US-10-417-884A-4123	Sequence 4123, Ap
41	41	24.3	503	6	US-10-767-701-44045	Sequence 44045, A
42	41	24.3	553	6	US-10-775-337-4	Sequence 4, Appli
43	40.5	24.0	55	6	US-10-100-683-8936	Sequence 8936, App
44	40.5	24.0	101	6	US-10-767-701-62239	Sequence 62239, A
45	40.5	24.0	140	6	US-10-767-701-46730	Sequence 46730, A

ALIGNMENTS

RESULT 1  
US-10-775-204-1802  
; Sequence 1802, Application US/10775204  
; GENERAL INFORMATION:  
; APPLICANT: Rosen, Craig A.  
; APPLICANT: Haseltine, William A.  
; APPLICANT: Balance, David J.  
; APPLICANT: Turner, Andrew J.  
; TITLE OF INVENTION: Albumin Fusion Proteins  
; FILE REFERENCE: P564  
; CURRENT APPLICATION NUMBER: US/10/775,204  
; CURRENT FILING DATE: 2004-02-11  
; PRIOR APPLICATION NUMBER: 60/341,811  
; PRIOR FILING DATE: 2001-12-21  
; PRIOR APPLICATION NUMBER: 60/360,000  
; PRIOR FILING DATE: 2002-02-28  
; PRIOR APPLICATION NUMBER: 60/378,950  
; PRIOR FILING DATE: 2002-05-10  
; PRIOR APPLICATION NUMBER: 60/398,008  
; PRIOR FILING DATE: 2002-07-24  
; PRIOR APPLICATION NUMBER: 60/411,355  
; PRIOR FILING DATE: 2002-09-18  
; PRIOR APPLICATION NUMBER: 60/414,984  
; PRIOR FILING DATE: 2002-10-02  
; PRIOR APPLICATION NUMBER: 60/417,611  
; PRIOR FILING DATE: 2002-10-11  
; PRIOR APPLICATION NUMBER: 60/420,246  
; PRIOR FILING DATE: 2002-10-23  
; PRIOR APPLICATION NUMBER: 60/423,623  
; PRIOR FILING DATE: 2002-11-05  
; PRIOR APPLICATION NUMBER: 60/351,360  
; PRIOR FILING DATE: 2002-01-28  
; Remaining Prior Application data removed - See File Wrapper or PALM.  
; NUMBER OF SEQ ID NOS: 2222  
; SOFTWARE: PatentIn Ver. 2.0  
; SEQ ID NO 1802  
; LENGTH: 32  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
; US-10-775-204-1802

Query Match 100.0%; Score 169; DB 6; Length 32;  
Best Local Similarity 100.0%; Pred. No. 1.7e-18;  
Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
CY 1 SPKMVQSGGCFGRKMDRISSSSGLGCKVLRH 32  
DB 1 SPKMVQSGGCFGRKMDRISSSSGLGCKVLRH 32

RESULT 2

US-10-775-204-1277

; Sequence 1277, Application US/10775204

; GENERAL INFORMATION:

; APPLICANT: Rosen, Craig A.

; APPLICANT: Haseltine, William A.

; APPLICANT: Balance, David J.

; APPLICANT: Turner, Andrew J.

; TITLE OF INVENTION: Albumin Fusion Proteins

; FILE REFERENCE: PF564

; CURRENT APPLICATION NUMBER: US/10/775,204

; CURRENT FILING DATE: 2004-02-11

; PRIOR APPLICATION NUMBER: 60/341,811

; PRIOR FILING DATE: 2001-12-21

; PRIOR APPLICATION NUMBER: 60/360,000

; PRIOR FILING DATE: 2002-02-28

; PRIOR APPLICATION NUMBER: 60/378,950

; PRIOR FILING DATE: 2002-05-10

; PRIOR APPLICATION NUMBER: 60/398,008

; PRIOR FILING DATE: 2002-07-24

; PRIOR APPLICATION NUMBER: 60/411,355

; PRIOR FILING DATE: 2002-09-18

; PRIOR APPLICATION NUMBER: 60/414,984

; PRIOR FILING DATE: 2002-10-02

; PRIOR APPLICATION NUMBER: 60/417,611

; PRIOR FILING DATE: 2002-10-11

; PRIOR APPLICATION NUMBER: 60/420,246

; PRIOR FILING DATE: 2002-10-23

; PRIOR APPLICATION NUMBER: 60/423,623

; PRIOR FILING DATE: 2002-11-05

; PRIOR APPLICATION NUMBER: 60/351,360

; PRIOR FILING DATE: 2002-01-28

; Remaining Prior Application data removed - See File Wrapper or PALM.

; NUMBER OF SEQ ID NOS: 2222

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 1277

; LENGTH: 134

; TYPE: PRT

; ORGANISM: Homo sapiens

; US-10-775-204-1277

; Query Match

Best Local Similarity 100.0%; Score 169; DB 6; Length 134;

Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMGSGGCGRKMDRISSSGLGCKVLRH 32

Db 103 SPKMGSGGCGRKMDRISSSGLGCKVLRH 134

US-10-775-204-1634

; Sequence 1634, Application US/10775204

; GENERAL INFORMATION:

; APPLICANT: Rosen, Craig A.

; APPLICANT: Haseltine, William A.

; APPLICANT: Balance, David J.

; APPLICANT: Turner, Andrew J.

; TITLE OF INVENTION: Albumin Fusion Proteins

; FILE REFERENCE: PF564

; CURRENT APPLICATION NUMBER: US/10/775,204

; CURRENT FILING DATE: 2004-02-11

; PRIOR APPLICATION NUMBER: 60/341,811

; PRIOR FILING DATE: 2001-12-21

; PRIOR APPLICATION NUMBER: 60/360,000

; PRIOR FILING DATE: 2002-02-28

; PRIOR APPLICATION NUMBER: 60/378,950

; PRIOR FILING DATE: 2002-05-10

; PRIOR APPLICATION NUMBER: 60/398,008

; PRIOR FILING DATE: 2002-07-24

; PRIOR APPLICATION NUMBER: 60/411,355

; PRIOR FILING DATE: 2002-09-18

; Remaining Prior Application data removed - See File Wrapper or PALM.

; NUMBER OF SEQ ID NOS: 2222

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 1275

; LENGTH: 719

; TYPE: PRT

; ORGANISM: Homo sapiens

; US-10-775-204-1275

; Query Match

Best Local Similarity 100.0%; Score 169; DB 6; Length 719;

Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; PRIOR APPLICATION NUMBER: 60/414,984

; PRIOR FILING DATE: 2002-10-02

; PRIOR APPLICATION NUMBER: 60/417,611

; PRIOR FILING DATE: 2002-10-11

; PRIOR APPLICATION NUMBER: 60/420,246

; PRIOR FILING DATE: 2002-10-23

; PRIOR APPLICATION NUMBER: 60/423,623

; PRIOR FILING DATE: 2002-11-05

; PRIOR APPLICATION NUMBER: 60/351,360

; PRIOR FILING DATE: 2002-01-28

; Remaining Prior Application data removed - See File Wrapper or PALM.

; NUMBER OF SEQ ID NOS: 2222

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 1634

; LENGTH: 641

; TYPE: PRT

; ORGANISM: Homo sapiens

; US-10-775-204-1634

; Query Match

Best Local Similarity 100.0%; Score 169; DB 6; Length 641;

Matches 32; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SPKMGSGGCGRKMDRISSSGLGCKVLRH 32

Db 25 SPKMGSGGCGRKMDRISSSGLGCKVLRH 56

US-10-775-204-1275

; Sequence 1275, Application US/10775204

; GENERAL INFORMATION:

; APPLICANT: Rosen, Craig A.

; APPLICANT: Haseltine, William A.

; APPLICANT: Balance, David J.

; APPLICANT: Turner, Andrew J.

; TITLE OF INVENTION: Albumin Fusion Proteins

; FILE REFERENCE: PF564

; CURRENT APPLICATION NUMBER: US/10/775,204

; CURRENT FILING DATE: 2004-02-11

; PRIOR APPLICATION NUMBER: 60/341,811

; PRIOR FILING DATE: 2001-12-21

; PRIOR APPLICATION NUMBER: 60/360,000

; PRIOR FILING DATE: 2002-02-28

; PRIOR APPLICATION NUMBER: 60/378,950

; PRIOR FILING DATE: 2002-05-10

; PRIOR APPLICATION NUMBER: 60/398,008

; PRIOR FILING DATE: 2002-07-24

; PRIOR APPLICATION NUMBER: 60/411,355

; PRIOR FILING DATE: 2002-09-18

; PRIOR APPLICATION NUMBER: 60/414,984

; PRIOR FILING DATE: 2002-10-02

; PRIOR APPLICATION NUMBER: 60/417,611

; PRIOR FILING DATE: 2002-10-11

; PRIOR APPLICATION NUMBER: 60/420,246

; PRIOR FILING DATE: 2002-10-23

; PRIOR APPLICATION NUMBER: 60/423,623

; PRIOR FILING DATE: 2002-11-05

; PRIOR APPLICATION NUMBER: 60/351,360

; PRIOR FILING DATE: 2002-01-28

; Remaining Prior Application data removed - See File Wrapper or PALM.

; NUMBER OF SEQ ID NOS: 2222

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 1275

; LENGTH: 719

; TYPE: PRT

; ORGANISM: Homo sapiens

; US-10-775-204-1275

OY 1 SPKMVGSGCFGRKMDRISSSSGLGCKVLR 32  
 Db 103 SPKMVGSGCFGRKMDRISSSSGLGCKVLRH 134

RESULT 5

US-10-775-204-2203  
 ; Sequence 2203, Application US/10775204  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Rosen, Craig A.  
 ; APPLICANT: Haseltine, William A.  
 ; APPLICANT: Balance, David J.  
 ; APPLICANT: Turner, Andrew J.  
 ; TITLE OF INVENTION: Albumin Fusion Proteins  
 ; FILE REFERENCE: PF564  
 ; CURRENT APPLICATION NUMBER: US/10/775,204  
 ; PRIOR APPLICATION NUMBER: 2004-02-11  
 ; PRIOR FILING DATE: 2001-12-21  
 ; PRIOR APPLICATION NUMBER: 60/360,000  
 ; PRIOR FILING DATE: 2002-02-28  
 ; PRIOR APPLICATION NUMBER: 60/378,950  
 ; PRIOR FILING DATE: 2002-05-10  
 ; PRIOR APPLICATION NUMBER: 60/398,008  
 ; PRIOR FILING DATE: 2002-07-24  
 ; PRIOR APPLICATION NUMBER: 60/411,355  
 ; PRIOR FILING DATE: 2002-09-18  
 ; PRIOR APPLICATION NUMBER: 60/414,984  
 ; PRIOR FILING DATE: 2002-10-02  
 ; PRIOR APPLICATION NUMBER: 60/417,611  
 ; PRIOR FILING DATE: 2002-10-11  
 ; PRIOR APPLICATION NUMBER: 60/420,246  
 ; PRIOR FILING DATE: 2002-10-23  
 ; PRIOR APPLICATION NUMBER: 60/423,623  
 ; PRIOR FILING DATE: 2002-11-05  
 ; PRIOR APPLICATION NUMBER: 60/351,360  
 ; PRIOR FILING DATE: 2002-01-28  
 ; Remaining Prior Application data removed - See File Wrapper or PALM.  
 ; NUMBER OF SEQ ID NOS: 2222  
 ; SOFTWARE: PatentIn Ver. 2.0  
 ; SEQ ID NO 2203  
 ; LENGTH: 32  
 ; TYPE: PRT  
 ; ORGANISM: Homo sapiens  
 ; US-10-775-204-2203

Query Match 51.5%; Score 87; DB 6; Length 32;  
 Best Local Similarity 50.0%; Pred. No. 1.8e-06;  
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

OY 1 SPKMVGSGCFGRKMDRISSSSGLGCKVLR 30  
 Db 2 APRSLRRSSCFGRMDRIGAQSGLGCSNFR 31

RESULT 6

US-10-796-307-725  
 ; Sequence 725, Application US/10796307  
 ; GENERAL INFORMATION:  
 ; APPLICANT: CARGILL, Michele et al.  
 ; TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH  
 ; FILE REFERENCE: C1001509  
 ; CURRENT APPLICATION NUMBER: US/10/796,307  
 ; CURRENT FILING DATE: 2004-03-10  
 ; NUMBER OF SEQ ID NOS: 44201  
 ; SOFTWARE: FastSeq for Windows Version 4.0  
 ; SEQ ID NO 725  
 ; LENGTH: 153  
 ; TYPE: PRT  
 ; ORGANISM: Homo sapiens  
 ; US-10-796-307-725

Query Match 51.5%; Score 87; DB 6; Length 153;  
 Best Local Similarity 50.0%; Pred. No. 1e-05;  
 Matches 15; Conservative 6; Mismatches 9; Indels 0; Gaps 0;

OY 1 SPKMVGSGCFGRKMDRISSSSGLGCKVLR 30  
 Db 121 APRSLRRSSCFGRMDRIGAQSGLGCSNFR 150

RESULT 7

US-10-775-204-2207  
 ; Sequence 2207, Application US/10775204  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Rosen, Craig A.  
 ; APPLICANT: Haseltine, William A.  
 ; APPLICANT: Balance, David J.  
 ; APPLICANT: Turner, Andrew J.  
 ; TITLE OF INVENTION: Albumin Fusion Proteins  
 ; FILE REFERENCE: PF564  
 ; CURRENT APPLICATION NUMBER: US/10/775,204  
 ; PRIOR APPLICATION NUMBER: 2004-02-11  
 ; PRIOR FILING DATE: 2001-12-21  
 ; PRIOR APPLICATION NUMBER: 60/360,000  
 ; PRIOR FILING DATE: 2002-02-28  
 ; PRIOR APPLICATION NUMBER: 60/378,950  
 ; PRIOR FILING DATE: 2002-05-10  
 ; PRIOR APPLICATION NUMBER: 60/398,008  
 ; PRIOR FILING DATE: 2002-07-24  
 ; PRIOR APPLICATION NUMBER: 60/411,355  
 ; PRIOR FILING DATE: 2002-09-18  
 ; PRIOR APPLICATION NUMBER: 60/414,984  
 ; PRIOR FILING DATE: 2002-10-02  
 ; PRIOR APPLICATION NUMBER: 60/417,611  
 ; PRIOR FILING DATE: 2002-10-11  
 ; PRIOR APPLICATION NUMBER: 60/420,246  
 ; PRIOR FILING DATE: 2002-10-23  
 ; PRIOR APPLICATION NUMBER: 60/423,623  
 ; PRIOR FILING DATE: 2002-11-05  
 ; PRIOR APPLICATION NUMBER: 60/351,360  
 ; PRIOR FILING DATE: 2002-01-28  
 ; Remaining Prior Application data removed - See File Wrapper or PALM.  
 ; NUMBER OF SEQ ID NOS: 2222  
 ; SOFTWARE: PatentIn Ver. 2.0  
 ; SEQ ID NO 2207  
 ; LENGTH: 28  
 ; TYPE: PRT  
 ; ORGANISM: Homo sapiens  
 ; US-10-775-204-2207

Query Match 46.2%; Score 78; DB 6; Length 28;  
 Best Local Similarity 60.9%; Pred. No. 3.3e-05;  
 Matches 14; Conservative 2; Mismatches 7; Indels 0; Gaps 0;

OY 8 SGCGRKMDRISSSSGLGCKVLR 30  
 Db 5 SSCFGGRMDRIGAQSGLGCSNFR 27

RESULT 8

US-10-681-389-22  
 ; Sequence 22, Application US/10681389  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Kenten, John H  
 ; APPLICANT: Tramontano, Alfonso  
 ; APPLICANT: Pilon, Aprile L  
 ; APPLICANT: Lohas, Gerald L  
 ; APPLICANT: Roberts, Steven F  
 ; TITLE OF INVENTION: HEAT-SHOCK FUSION-BASED VACCINE SYSTEM  
 ; FILE REFERENCE: U.S. Patent Application No. 09\026,276  
 ; CURRENT FILING DATE: 2003-10-07  
 ; PRIOR APPLICATION NUMBER: US/09/964,201A

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; PRIOR FILING DATE: 2002-05-21
; NUMBER OF SEQ ID NOS: 35
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 22
; LENGTH: 31
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-681-383-22

Query Match          46.2%; Score 78; DB 6; Length 31;
Best Local Similarity 60.9%; Pred. No. 3.7e-05;
Matches 14; Conservative 2; Mismatches 7; Indels 0; Gaps 0;

QY      8  SGCGRKMDRISSSSGLGCKVLR 30
DB      8  SSCFGGRMDRIGAGSGLGCSNFR 30

RESULT 9
PCT-US04-05092-28
; Sequence 28, Application PC/TUS0405092
; GENERAL INFORMATION:
; APPLICANT: INCYTE CORPORATION; RAMKUMAR, Jayalaxmi;
; APPLICANT: MARQUIS, Joseph P.; SWARNAKAR, Anita;
; APPLICANT: CHAWLA, Narinder K.; TRAN, Uyen K.;
; APPLICANT: BECHA, Shanya; LEE, Soo Yeun;
; APPLICANT: HAFALIA, April J.A.; RICHARDSON, Thomas;
; APPLICANT: KHARE, Reena; JIANG, Xin;
; APPLICANT: JACKSON, Alan; YANG, Junming;
; APPLICANT: GORVAD, Ann
; TITLE OF INVENTION: KINASES AND PHOSPHATASES
; FILE REFERENCE: PF-1643 PCT
; CURRENT APPLICATION NUMBER: PCT/US04/05092
; PRIOR FILING DATE: 2004-02-20
; PRIOR APPLICATION NUMBER: US 60/449,059
; PRIOR FILING DATE: 2003-02-20
; PRIOR APPLICATION NUMBER: US 60/456,932
; PRIOR FILING DATE: 2003-03-19
; PRIOR APPLICATION NUMBER: US 60/458,844
; PRIOR FILING DATE: 2003-03-28
; PRIOR APPLICATION NUMBER: US 60/461,678
; PRIOR FILING DATE: 2003-04-09
; PRIOR APPLICATION NUMBER: US 60/463,937
; PRIOR FILING DATE: 2003-04-17
; NUMBER OF SEQ ID NOS: 92
; SOFTWARE: PERL Program
; SEQ ID NO 28
; LENGTH: 657
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: misc feature
; OTHER INFORMATION: Incyte ID No: 7517520CD1
PCT-US04-05092-28

Query Match          29.9%; Score 50.5; DB 1; Length 657;
Best Local Similarity 44.8%; Pred. No. 12;
Matches 13; Conservative 5; Mismatches 6; Indels 5; Gaps 2;

QY      1  SPKNVQSGCGFRKMDRISSSSGLGCKVL 29
DB      566  SPEVISGEG-YGRKADVWS---LGCTVV 589

RESULT 10
US-10-487-092-18
; Sequence 18, Application US/10487092
; GENERAL INFORMATION:
; APPLICANT: INCYTE CORPORATION; YUE, Henry
; APPLICANT: LU, Dylung Alina M.; SWARNAKAR, Anita;
; APPLICANT: TANG, Y. Tom; GRIFFIN, Jennifer A.;
; APPLICANT: EMERLING, Brooke M.; FORSYTHE, Ian J.;
; APPLICANT: YAO, Monique G.; RAMKUMAR, Jayalaxmi;
```

```
; APPLICANT: RICHARDSON, Thomas W.; BECHA, Shanya D.;
; APPLICANT: LEE, Ernestine A.; WARREN, Bridget A.;
; APPLICANT: LEHR-MASON, Patricia M.; BAUGHN, Mariah R.;
; APPLICANT: LI, Joana X.; DUGGAN, Brendan M.;
; APPLICANT: GIETZEN, Kimberly J.; LAL, Preeti G.;
; APPLICANT: BOROWSKY, Mark L.; ISON, Craig H.;
; APPLICANT: THANGAVELU, Kavitha; XU, Yuming;
; APPLICANT: LEE, Sally; ELLIOTT, Vicki S.;
; APPLICANT: SPRAGUE, William W.; AZIMZAI, Yalda;
; APPLICANT: HAFALIA, April J.A.; DING, Li;
; APPLICANT: NGUYEN, Daniel B.; HONGHELL, Cynthia D.;
; APPLICANT: LUO, Wen; WALIA, Narinder K.;
; APPLICANT: MARQUIS, Joseph; JACKSON, Jennifer L.;
; APPLICANT: TRAN, Uyen K.
; TITLE OF INVENTION: INTRACELLULAR SIGNALING MOLECULES
; FILE REFERENCE: PF-1145 USN
; CURRENT APPLICATION NUMBER: US/10/487,092
; PRIOR FILING DATE: 2004-02-17
; PRIOR APPLICATION NUMBER: PCT US02/26322
; PRIOR FILING DATE: 2002-08-16
; PRIOR APPLICATION NUMBER: US 60/313,245
; PRIOR FILING DATE: 2001-08-17
; PRIOR APPLICATION NUMBER: US 60/314,751
; PRIOR FILING DATE: 2001-08-24
; PRIOR APPLICATION NUMBER: US 60/316,752
; PRIOR FILING DATE: 2001-08-31
; PRIOR APPLICATION NUMBER: US 60/316,847
; PRIOR FILING DATE: 2001-08-31
; PRIOR APPLICATION NUMBER: US 60/322,188
; PRIOR FILING DATE: 2001-09-14
; PRIOR APPLICATION NUMBER: US 60/326,390
; PRIOR FILING DATE: 2001-09-28
; PRIOR APPLICATION NUMBER: US 60/328,952
; PRIOR FILING DATE: 2001-10-12
; PRIOR APPLICATION NUMBER: US 60/345,468
; PRIOR FILING DATE: 2001-10-19
; PRIOR APPLICATION NUMBER: US 60/372,499
; PRIOR FILING DATE: 2002-04-12
; NUMBER OF SEQ ID NOS: 90
; SOFTWARE: PERL Program
; SEQ ID NO 18
; LENGTH: 874
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: misc feature
; OTHER INFORMATION: Incyte ID No: 7729840CD1
US-10-487-092-18

Query Match          29.0%; Score 49; DB 6; Length 874;
Best Local Similarity 34.4%; Pred. No. 27;
Matches 11; Conservative 4; Mismatches 17; Indels 0; Gaps 0;

QY      1  SPKNVQSGCGFRKMDRISSSSGLGCKVLRH 32
DB      318  SPENFKLKSCIRKTDSDKRFCEIDIEVERH 349

RESULT 11
US-10-796-307-608
; Sequence 608, Application US/10796307
; GENERAL INFORMATION:
; APPLICANT: CARGILL, Michele et al.
; TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
; TITLE OF INVENTION: MYOCARDIAL INFARCTION, METHODS OF DETECTION AND USES THEREOF
; FILE REFERENCE: CL001509
; CURRENT APPLICATION NUMBER: US/10/796,307
; PRIOR FILING DATE: 2004-03-10
; NUMBER OF SEQ ID NOS: 44201
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 608
; LENGTH: 1307
; TYPE: PRT
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ORGANISM: Homo sapiens  
US-10-796-307-608

Query Match 28.1%; Score 47.5; DB 6; Length 1307;  
Best Local Similarity 38.7%; Pred. No. 69;  
Matches 12; Conservative 4; Mismatches 6; Indels 9; Gaps 1;

QY 10 CPGKMDRISSSS-----GUGCKVLR 31  
DB 5 CSGRLIERSSSTPRASCWSRGCGCHLNR 35

RESULT 12  
US-10-767-701-46988  
Sequence 46988, Application US/10767701  
GENERAL INFORMATION:  
APPLICANT: Kovalic, David K.  
APPLICANT: Zhou, Yihua  
APPLICANT: Cao, Yongwei  
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With  
FILE REFERENCE: 38-21(53535)B  
CURRENT APPLICATION NUMBER: US/10/767,701  
CURRENT FILING DATE: 2004-01-29  
NUMBER OF SEQ ID NOS: 63128  
SEQ ID NO 46988  
LENGTH: 147  
TYPE: PRT  
ORGANISM: Sorghum bicolor  
FEATURE:  
OTHER INFORMATION: Clone ID: SORBI-28MAY03-C49\_322.pep  
US-10-767-701-46988

Query Match 27.5%; Score 46.5; DB 6; Length 147;  
Best Local Similarity 40.6%; Pred. No. 8.7;  
Matches 13; Conservative 4; Mismatches 12; Indels 3; Gaps 1;

QY 3 KMWGSGCGFRKM--DRISSSSGUGCKVLR 31  
DB 16 KGLSGSSISGRKLAVASRPPSSARAAACRSTR 47

RESULT 13  
US-10-767-701-33741  
Sequence 33741, Application US/10767701  
GENERAL INFORMATION:  
APPLICANT: Kovalic, David K.  
APPLICANT: Zhou, Yihua  
APPLICANT: Cao, Yongwei  
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With  
FILE REFERENCE: 38-21(53535)B  
CURRENT APPLICATION NUMBER: US/10/767,701  
CURRENT FILING DATE: 2004-01-29  
NUMBER OF SEQ ID NOS: 63128  
SEQ ID NO 33741  
LENGTH: 116  
TYPE: PRT  
ORGANISM: Sorghum bicolor  
FEATURE:  
OTHER INFORMATION: Clone ID: SORBI-28MAY03-C36286\_1.pep  
US-10-767-701-33741

Query Match 26.6%; Score 45; DB 6; Length 116;  
Best Local Similarity 42.1%; Pred. No. 11;  
Matches 8; Conservative 5; Mismatches 6; Indels 0; Gaps 0;

QY 13 RKMDRISSSSGUGCKVLR 31  
DB 4 KKMERTSITGPGSGCTILRK 22

RESULT 14

US-10-767-701-32774  
Sequence 32774, Application US/10767701  
GENERAL INFORMATION:  
APPLICANT: Kovalic, David K.  
APPLICANT: Zhou, Yihua  
APPLICANT: Cao, Yongwei  
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With  
FILE REFERENCE: 38-21(53535)B  
CURRENT APPLICATION NUMBER: US/10/767,701  
CURRENT FILING DATE: 2004-01-29  
NUMBER OF SEQ ID NOS: 63128  
SEQ ID NO 32774  
LENGTH: 182  
TYPE: PRT  
ORGANISM: Sorghum bicolor  
FEATURE:  
OTHER INFORMATION: Clone ID: SORBI-28MAY03-C17396\_1.pep  
US-10-767-701-32774

Query Match 26.6%; Score 45; DB 6; Length 182;  
Best Local Similarity 28.6%; Pred. No. 18;  
Matches 6; Conservative 9; Mismatches 6; Indels 0; Gaps 0;

QY 6 QGSGCGFRKMDRISSSSGUGC 26  
DB 32 QGPQIYAIOQNQLAAMGMC 52

RESULT 15  
US-09-979-167-123  
Sequence 123, Application US/09979167  
GENERAL INFORMATION:  
APPLICANT: PLOWMAN, GREGORY D.  
APPLICANT: MARTINEZ, RICARDO  
APPLICANT: WHYTE, DAVID  
APPLICANT: SUDERSANAM, SUCHA  
TITLE OF INVENTION: PROTEIN KINASES  
FILE REFERENCE: 038602/1273  
CURRENT APPLICATION NUMBER: US/09/979,167  
CURRENT FILING DATE: 2001-11-20  
NUMBER OF SEQ ID NOS: 269  
SOFTWARE: Patentin Ver. 2.1  
SEQ ID NO 123  
LENGTH: 378  
TYPE: PRT  
ORGANISM: Murine sp.  
US-09-979-167-123

Query Match 26.3%; Score 44.5; DB 5; Length 378;  
Best Local Similarity 34.3%; Pred. No. 48;  
Matches 12; Conservative 6; Mismatches 10; Indels 7; Gaps 2;

QY 1 SPKMWGSGCGFRKMDRISSSSGUGC--KVLRRH 32  
DB 48 APEVLQKGTCTYDSSADWFS---LGCMLFKILRGH 78

Search completed: March 29, 2004, 14:47:48  
Job time : 14 secs



# **STIC Search Report**

## **Biotech-Chem Library**

**STIC Database Tracking Number: 118013**

**TO: Janet Epps-Ford**  
**Location: rem/2c05/2c18**  
**Art Unit: 1635**  
**Monday, March 29, 2004**

**Case Serial Number: 09/902517**

**From: Edward Hart**  
**Location: Biotech-Chem Library**  
**REM-1A55**  
**Phone: 571-272-2512**

**edward.hart@uspto.gov**

### **Search Notes**

Examiner Epps-Ford,

Here are the results of the search you requested.

Please feel free to contact me if you have any questions.

Edward Hart

**STIC-Biotech/ChemLib**

118013

**From:** Epps-Ford, Janet  
**Sent:** Friday, March 26, 2004 4:52 PM  
**To:** STIC-Biotech/ChemLib  
**Subject:** Protein sequence Search

RECEIVED  
MAR 29 2004  
STIC

Please search SEQ ID NO: 49 of application 09/902,517 in all pending and commercial amino acid databases.

*Thanks,*

*Janet L. Epps-Ford, Ph.D.*

*Art Unit 1635*

*Mailbox: Remsen 2C18*

*Office: Remsen 2C05*

*Phone: 571-272-0757*

*Fax: 571-273-0757*

3/29/04

1- AA

ABSSCP

3/29/04